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DATA SET STANDARDIZATION HANDBOOK

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Introduction

In this *Data Set Standardization Handbook*, the Bureau of Land Management presents its procedures for developing, approving, implementing, and revising (1) the data elements it plans to use in automated systems bureauwide to help it more successfully carry out its mission and (2) the standards for the data--the rules by which data will be described and recorded.

To the user, much of the material in this *Handbook* may be new and at first staggering. The procedures documented are complicated, involving a vast array of new terms and roles and responsibilities within the Bureau. Because of the complexity of its material, this *Handbook* is not a document to be read once and put aside, but a reference to be studied and referred to when needed. It leads users through the maze of procedures, informing them of what tasks need to be done by whom, how best to do them, and in what order they need to be done. The flowchart in Figure 1 is a reference guide to the standardization process.

The first three chapters of this *Handbook* briefly introduce data standardization. Chapter 1 presents the objectives of the *Handbook*. Chapter 2 defines roles and responsibilities of the key players in the data set standardization process. And Chapter 3 defines data standardization and information system terms that the reader may not know.

Chapter 4, Development of Data Elements and Standards for Data Sets, presents the meat of the *Handbook*. It discusses the team's review of existing information from the data element dictionary, other automated systems, and other agency data. It also discusses developing a recommendation on which process the team should use; the data inventory (if needed); and evaluating inventory findings, recommending data elements, definitions, standards and codes, and preparing data set reports. Chapter 4 particularly emphasizes the data set team--the basic work unit in developing data elements, definitions, standards, and codes -- describing how teams should be set up, who to select as members, when the team meets, and what the team does.

Chapters 5-8 discuss the later stages of the data set standardization process. Chapter 5 explains the review and approval of the draft data set reports, including who ensures that reports are adequately reviewed, what reviewers should seek in their reviews, and how review comments should be handled. Chapter 6 briefly describes data modeling and the relationship to the data standardization effort. Chapter 7 deals with how spatial and cartographic elements and standards will be developed. Chapter 8 explains how the data elements, definitions, standards, and codes will be implemented. And Chapter 9 explains the process for changing data elements and standards.

The appendices present material to help those involved in the data set standardization process. Appendix 1 presents the exerpt from the Bureau of Land Management Enterprise Data Model including definitions of the data class subject areas and data classes which are within the Resources Management data set assignments. Appendix 2 describes how to access and use the current data element dictionary. Appendix 3 provides direction on inventorying data sets. Appendix 4 explains how to use the dBase III+ data standards program. Appendix 5 describes the data entry worksheet and how to fill it out.

If you have questions concerning the data set standardization process follow this procedure:

Questions on the General Process

Data Set Team Leader to State Office Data Administrator (SODA)
SODA to the Lead Assistant Director's Data Administrator (ADDA)
ADDA to the Bureau Data Administrator (BDA)

Questions regarding the Data Element Dictionary

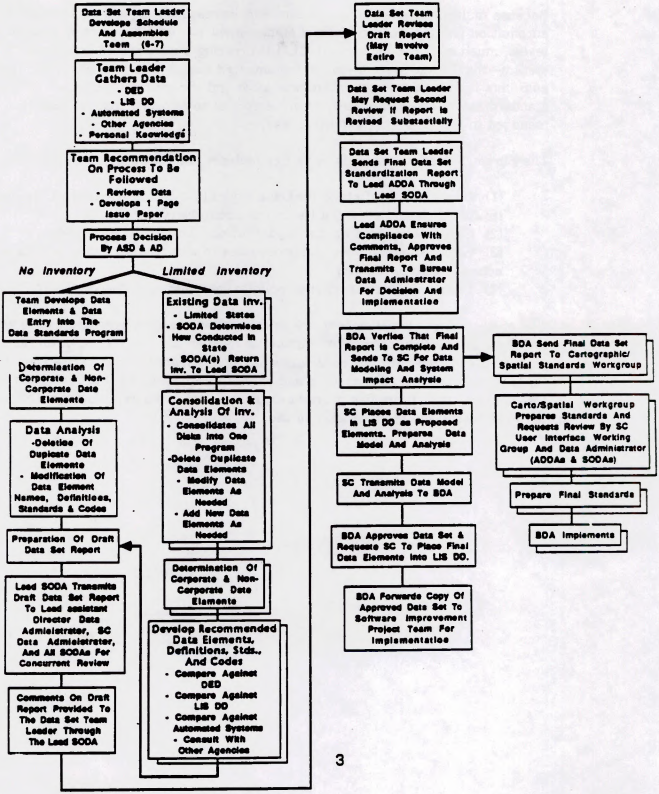
Data Set Team Leader to SODA
SODA to Tom Costello (FTS 776-0144, Com 303-236-0144) at the Service Center

Questions on the Dbase III Data Standards Program

Inventory Participants to their SODA
SODA to Bureau Data Administrator (BDA)
BDA to Robin Stoebe (programer)

Figure 1.

Flowchart Of Data Set Standardization Process


Data Set Team Leader Develops Schedule And Assembles Team (6-7)
Team Leader Gathers Data - DED - LIS DD - Automated Systems - Other Agencies - Personal Knowledge
Team Recommendation On Process To Be Followed - Reviews Data - Develops 1 Page Issue Paper
Process Decision By ASD & AD
No Inventory
Limited Inventory
Team Develops Data Elements & Data Entry Into The Data Standards Program
Determination Of Corporate & Non-Corporate Data Elements
Data Analysis -Deletion Of Duplicate Data Elements - Modification Of Data Element Names, Definitions, Standards & Codes
Preparation Of Draft Data Set Report
Lead SODA Transmits Draft Data Set Report To Lead assistant Director Data Administrator, SC Data Administrator, And All SODAs For Concurrent Review
Comments On Draft Report Provided To The Data Set Team Leader Through The Lead SODA
Existing Data Inv. - Limited States - SODA Determines How Conducted In State - SODA(s) Return Inv. To Lead SODA
Consolidation & Analysis Of Inv. - Consolidates All Disks Into One Program -Delete Duplicate Data Elements - Modify Data Elements As Needed - Add New Data Elements As Needed
Determination Of Corporate & Non-Corporate Data Elements
Develop Recommended Data Elements, Definitions, Stds., And Codes - Compare Against DED - Compare Against LIS DD - Compare Against Automated Systems - Consult With Other Agencies
Data Set Team Leader Revises Draft Report (May Involve Entire Team)
Data Set Team Leader May Request Second Review If Report Is Revised Substantially
Data Set Team Leader Sends Final Data Set Standardization Report To Lead ADDA Through Lead SODA
Lead ADDA Ensures Compliance With Comments, Approves Final Report And Transmits To Bureau Data Administrator For Decision And Implementation
BDA Verifies That Final Report Is Complete And Sends To SC For Data Modeling And System Impact Analysis
SC Places Data Elements In LIS DD as Proposed Elements. Prepares Data Model And Analysis
SC Transmits Data Model And Analysis To BDA
BDA Approves Data Set & Requests SC To Place Final Data Elements Into LIS DD.
BDA Forwards Copy Of Approved Data Set To Software Improvement Project Team For Implementation
BDA Send Final Data Set Report To Cartographic/ Spatial Standards Workgroup
Carto/Spatial Workgroup Prepares Standards And Requests Review By SC User Interface Working Group And Data Administrator (ADDAs & SODAs)
Prepare Final Standards
BDA Implements

Chapter 1
Objectives

Because multiple use land management will increasingly depend on successful automation and the Bureau of Land Management has vast amounts of data at all levels, much of it not automated, BLM is creating a modernized computer system--the Target System--to be implemented bureauwide in 1993. The Bureau considers its data a valuable corporate asset and recognizes that data standardization and administration are essential to ensuring that its data is managed in the most cost-effective way.

The Bureau's data management strategy includes the following:

(1) Developing an Enterprise Data Model (EDM) (see Appendix 1) to identify its functions and organize its corresponding data,
(2) Establishing data elements, definitions, standards, and codes,
(3) Establishing policies and procedures to ensure that accurate data is accessible to users, and
(4) Developing data exchange policies, procedures and agreements.

The objectives of this *Handbook* are to (1) explain the data standardization process and provide specific instructions on how to develop data elements, definitions, standards and codes for the data sets which came from the Enterprise Data Model; (2) provide a process to recognize and validate user requirements for automated information; and (3) provide procedures, forms, and computer programs for the data set teams and team leaders to use.

Chapter 2
Roles and Responsibilities

This chapter lists the roles and responsibilities involved in the data element and standards development process outlined in this *Handbook* but does not address other roles of the positions.

Assistant Director's Data Administrator (ADDA) - Coordinates development and implementation of corporate data elements and standards within the responsibility of its Assistant Director. Reviews and evaluates proposed data elements and standards before passing them on to the Bureau Data Administrator as acceptable from the perspective of the Assistant Director's programs.

Bureau Data Administrator (BDA) - Directs development and implementation of the BLM Enterprise Data Model, makes decisions on design of the data element identification and standardization process, and approves the selected corporate data elements and standards. Ensures the development of a new Land Information System data dictionary.

Data Set Team - Conducts the data inventory, proposes data elements, definitions, standards, and codes, and prepares a report for each assigned data set.

Data Set Team Leader - Forms and leads a data set team to develop corporate data elements, definitions, standards, and codes. Distributes source documents and other information describing data in use or proposed for automation, such as the data element dictionary and data flow diagrams.

Division of Information Resource Management (WO-770) - Makes final determinations on access security requirements for each identified data element.

Field Committee - Oversees BLM's data administration effort.

Lead State Director - Requests participation of individuals from other states on the data set team and ensures that the data set team leader and state team members complete their assignments within deadlines.

Service Center Data Administrator (SCDA) - Assists the Bureau Data Administrator in establishing and administering the BLM Land Information System data dictionary, and the current data element dictionary management (1) to evaluate data element modifications, deletions, and documentation; (2) to distribute source documents; and (3) to assist in data evaluations as needed.

Service Center Data Base Administrator - This position does not now exist with this title, but someone will be designated as responsible for developing or making changes to the various data dictionaries under the direction of the SCDA and of managing the data bases on the SC computers.

State Office Data Administrator (SODA) - Coordinates a state's selection of corporate data elements and standards for the BLM Land Information System data dictionary. SODAs (1) act as lead contacts in their states for conducting data inventories when requested by other state data set team leaders, (2) initiate data inventories within their states and ensure completion of inventories to meet deadlines, (3) carry out procedures for review and comment on the work of data set teams from their state's perspective, (4) train and facilitate the work of data set team leaders, inventory participants, and reviewers within their states, and (5) distribute source documents and other information describing such current and proposed data elements or requirements as the data element dictionary and data flow diagrams.

Washington Office Data Set Team Member - Provides program input to the data set team and ensures that Bureau corporate data standards consider program policy and direction. The WO team member also serves as the subject matter specialist for each data set assignment.

Chapter 3
Definitions

ADDA - Assistant Director's Data Administrator

Alias - A different name for a data element with the same definition, standards, and codes

ALMRS - Automated Land and Minerals Records System

Alpha List - Computer list of data elements in alphabetical order.

Application -In the current data element dictionary (DED), an application represents the total data for an activity. Also refers to a computer program, written or purchased, for performing BLM program-specific function or tasks.

ARD - Automated Resources Data

Attribute - A characteristic or piece of information about a data element, i.e., attributes of "tree" are age, height, diameter, etc. An attribute of a data element can also be who added it to the dictionary, how many times it was modified, and the definition. Therefore the definition is also an attribute.

BDA - Bureau Data Administrator

BLM - Bureau of Land Management

Bureau - Bureau of Land Management

Corporate Data - The individual pieces of information (alphanumeric or symbolic) needed bureauwide for BLM to carry out its mission. Corporate data is standardized bureauwide and is to be shared and combined by offices, usually through automation.

Data - A formal representation of facts, concepts, or instructions suitable for communication, interpretation, or processing by humans or automatic means; any representation such as characters or analog amounts to which meaning is, or might be, assigned.

DA (Data Administrator) - The person in a BLM office who acts as the focal point for managing and operating the office's data.

Data Element (DE) - A collection of data (characters) that describes an item of information at or near its basic level--the level at which it cannot be further subdivided. A data element may be thought of as a pigeon hole for storing collected data. A data element is not data. A data element can only contain one type and piece of information, it cannot contain multiple pieces of information. An elementary item, e.g., (month), has no subordinate elements. A group item, e.g., (date) may consist of day, month, and year subcomponents and still be a single data element. A data element may consist of a specific value that can be numeric, alphabetic, or a combination of both. Data elements may also be tied to spatial attributes, as in HERD LOCATION.

Data Element Codes - At times when the data being recorded can not be recorded directly, codes are necessary to record the data. Codes should be as meaningful as possible and semantic when ever possible. Codes should be as user friendly as possible (using numbers only as a last resort). For example, in coding types of plans the codes should be RMP, ACT, PROJ, etc instead of 1 = RMP, 2 = ACT, 3 = PROJ, etc.

Data Element Definition - The description of the type of data the data element will contain. Needs to be described in plain english and be understandable to a non-technical person.

Data Element Standards - The rules by which data is recorded (limits, ranges, precision, units of measure). For example: month must be numeric and range between 01 and 12; record the miles to the nearest tenth; use english not metric units; the date of the notice is to be the date it appears in the Federal Register.

Data Element Number - A unique number assigned to each data element in the data element dictionary (DED).

Data Set - A combination of related data elements on a particular subject. The data set contains data elements most specific to the subject of the data set. A data set is the Data Class Subject Area from the BLM Enterprise Data Model. The term Data Set us used because it was developed and used prior to the development of the EDM.

Data Set Inventory - A step in the data standardization process in which information used by BLM relating to a data set is identified.

Data Set Team - A team led by a data set team leader and consisting of a Washington Office program lead, representatives from more than one state, and, if possible, a Service Center resource specialist for the subject area. A data set team may also include a Forest Service resource specialist. Responsible for standardizing the data for a particular subject, the data set team analyzes existing information and generates data elements, definitions, standards, and codes, for the data set.

Data Set Team Leader (DSTL) - Person in charge of a data set team.

Data Set Report - A report describing the efforts and results of the work of a data set team in standardizing each data set, including the recommended corporate data elements, definitions, standards, and codes.

dBaseIII Plus (dB3+) - A data base software program.

DED (Data Element Dictionary) - The repository for all definitive information about data elements, including their use, meanings, sources, characteristics, relationships, and authorities (law, regulation, or manual that authorizes their use). The data element dictionary is subdivided by applications (uses).

Enterprise Data Model - The global representation of the BLM's business functions and associated data at a high or general level. Is the first step in Information Engineering processes.

Field Committee (FC) - The associate state directors and comparable Headquarters and Service Center representatives.

Geographic Coordinate Data Base (GCDB) - A data base containing digitized (computerized) geographic coordinates for corners and points of the Public Land Survey System. The GCDB is designed to provide graphic portrayal and automated mapping of the land net.

IRM - Information Resource Management

Lead DA - Lead Data Administrator, lead refers to the role of the data administrator working with the data set team leader for a particular data set standardization effort.

Lead SODA - Lead State Office Data Administrator. See lead data administrator.

LIS - Land Information System

LIS Data Dictionary - BLM's Target System data dictionary, which will contain data elements, definitions, standards and codes for Bureau corporate data related to the Geographic Coordinate Data Base, resources, and the basic building blocks of BLM's Automated Land and Minerals Records System (ALMRS): Legal Land Description, Status, Alaska ALMRS, Case Recordation, and Mining Claim Recordation. Also may include Solid Leasables Management System, Automated Inspection Report System (AIRS), and Management Report of Operations (MRO).

Naming Convention (or Standard) - A convention is a rule or algorithm that, when applied to a body of data, produces a standard result.

Noncorporate Data (previously termed discretionary data) - Data that need not be standardized bureauwide but may be standardized on a state, district, or area basis.

Program - A BLM term tied to budget subactivity.

SCDA - Service Center Data Administrator

SODA - State Office Data Administrator

Standards - The rules by which data is described and recorded. For example, a standard for recording months of the year might be that months must be numeric and range from 01 to 12.

System - A collection of people, machines, information, methods, and individual roles and responsibilities organized to accomplish a set of specific functions.

Chapter 4
Development of Data Elements and Standards for Data Set

Introduction

This chapter deals with the process used in generating data elements, definitions, standards, and codes for each data set. The chapter is divided into three parts: general procedures, procedures for use when an inventory is not conducted, and procedures for use when a limited inventory is conducted.

Part 1
General Procedures

Standard Data Set Names for Data Set Assignments

Round 1 of the Data Standardization Project was composed of Common Resource Data Sets--these are basic inventories of resources (what, where, how much/many, etc.) without data elements required for management interpretation. Rounds 2 and 3 of the Project are Resources Management Data Sets which include data elements necessary for particular program management information. The Resource Management Data Sets are composed of seven standard data sets stemming from the Bureau Enterprise Data Model Data Class Subject Areas (Appendix 1). Data elements within these data sets should be developed to cover the majority of Bureau program specific information needed as corporate data. The seven data sets are:

(1) Analysis
(2) Authorization
(3) Compliance/Enforcmnt*
(4) Evaluation
(5) Monitoring/Inspecton*
(6) Plan
(7) Report

* Note abbreviations

Round 1 assignments did not need standard names because they did not contain standard data sets. However, most assignments in Rounds 2 and 3 need standard names so that the data sets from each team can be compared with each other on the dBase III program. The Standard Data Set names are in the list above. The list below identifies the Standard Program names which should follow the data set names on the data entry forms and in the dBase III program which is discussed later in this chapter and in appendices 3 and 4.

(1) Resource Mgt. Plng.
(2) Lands
(3) Minerals Leasables
(4) Minerals Locatables
(5) Minerals Salables
(6) Minerals Fluids
(7) Watershed
(8) Range
(9) Horses & Burros
(10) Wildlife & Fish
(11) Recreation
(12) Visual Resources
(13) Wilderness
(14) Cultural Resources
(15) Paleontology
(16) Forestry
(17) Hazardous Materials

The names should be combined as in the following examples:

Analysis-Lands
Compliance/Enforcemnt-Minerals Locatables
Evaluation-Range

Schedule Development and Team Formation

For each team assignment (one assignment may include more than one data set) the data set team leader will prepare a schedule of timeframes and completion dates for all major steps of the standardization process.

The data set team leader also has the responsibility of forming a team to develop the data elements, definitions, standards, and codes for each assigned data set. The team will consist of specialists within the subject area from the following organizations:

(1) Washington Office program staffs (one per data set team),
(2) More than one state (with consideration given to states heavily involved in the program area), and
(3) The Service Center if it can provide expertise in the program area (one per data set team).

A suggested target size for the team is six to eight members in addition to the team leader. The following criteria should be considered in selecting team members:

(1) Expertise or working knowledge in the data set subject area.
(2) Desire to participate in setting standards for the Bureau's Land Information System.
(3) Interest in automating the Bureau's resource data.

The data set team leader may wish to confer with the state office data administrator (SODA) and the Washington program office in selecting team members.

The Forest Service will be invited to participate on each of the data set teams. The Bureau Data Administrator (BDA) will coordinate with the Washington Office of the Forest Service to select a member for each team on which the Forest Service wishes to be represented. The BDA will give the name of each Forest Service member to the lead assistant director's data administrator (ADDA), who will pass it on to the team leader. The team may also include members from other agencies at the team leaders discretion.

Once the data set team leader has selected potential team members, the state office data administrator (SODA) for the lead state will coordinate with the other SODAs and lead assistant director's data administrator (ADDA) to confirm that potential members can participate. SODAs will then check with supervisors to get supervisory permission for potential members to serve on the team and confirm this permission with the lead SODA.

The state director from the lead state (or Service Center Director or Assistant Director, depending upon where the data set team leader works,) will formally request participation of the selected team members on the data set team. (See Illustration 1.) The requesting memorandum should include the expected timeframe of the task and the deadline for its completion. The memo should also state that the team member's office will pay all expenses of the member's participation and request that the assigned team member call the data set team leader to confirm participation.

Upon receiving participation confirmation, the data set team leader will send a welcoming memo (See Illustration 2) and a copy of this *Handbook*. The memo will include a schedule; team member names, offices, and phone numbers; the purpose of the task; and the priority of the work. This memo will also discuss the first task--the analysis of existing data to prepare a recommendation on the process to be used by the team--and establish procedures and a timeframe for completing this task.

Development of Team Recommendation

The purpose of this step is to determine how the team should proceed with developing standards for the assigned data set(s). Two choices are possible:

(1) Team proceeds on its own using existing data, or
(2) Team requires a limited inventory to provide enough data to generate data elements, definitions, standards, and codes.

The first step is for the data set team leader to gather existing information on the data set subject. During the interim period, there will be one dictionary the current applications data element dictionary. The dictionary will include application 2006 which will contain all approved corporate data elements. The Service Center Division of Data Management will maintain this dictionary and any future ones which are developed.

The purpose of gathering the information is to determine the number and type of data elements, standards, and codes already existing for the subject area. Sources are

(1) Existing data element dictionary (DED),
(2) Other Bureau automated systems,
(3) professional publications,
(4) other agencies, and
(5) interest groups which maintain automated databases.

The data set team leader will obtain a copy of application 2006 (approved corporate data elements) and the key word index (an alphabetical listing of all data elements) from the current data element dictionary. See Appendix 2 on how to access and use the current data element dictionary.

Team leaders may obtain information about data elements from the current data element dictionary in three ways.

(1) Using the selection access to the data element dictionary (DED) team leaders may view the complete definitions and standards for each data element and have them printed out.
(2) Because data elements are grouped by applications in the current DED applications can be printed out for team leader use. About 300 applications and associated data elements now exist. (See data element 8850, illustration 3 for example of application index.)
(3) A special application may be devised to include all data elements required by a particular team.

For some data sets, data elements that the team must review will occur throughout many applications and require time to pull the needed information on each one. A special application would facilitate the team's review of data elements.

To develop a special application, the team leader will need to provide a list of data elements to be placed in the special application. This list may be developed by using the key work index or existing application index(s). To develop the special application, the team leader needs to contact the Service Center Division of Data Management (SC 320) (Mike Thompson, FTS 776-9935) through the lead SODA.

The Service Center Division of Data Management can also provide help on the data element dictionary and provide such other useful information as data flow diagrams and completed data models. The team leader may seek help from the state office data administrator (SODA) and the team should also canvass other SODAs and the lead assistant director's data administrator (ADDA) for this information.

The team leader also gathers information from other BLM automated systems, as well as from other agencies. The team leader should call state and other federal agencies for input to the standardization process where (1) BLM supplies data to another agency, (2) BLM uses or would like to use another agency's data, or (3) BLM coordinates with the agency and the agency uses the same type of data. Some potential federal agencies to be called are the Forest Service, Fish and Wildlife Service, Soil Conservation Service, National Park Service, Bureau of Indian Affairs, Army Corps of Engineers, Bureau of Reclamation, and the Environmental Protection Agency.

After the data has been gathered, the team meets to determine if it has enough information to conduct the data standardization effort. The team reviews the material, but does not analyze it to start developing data elements, definitions, standards, or codes. The team is not concerned with duplicate data elements, unclear or incomplete definitions, improper or incomplete standards or codes. Rather the team seeks to determine if existing material covers the subject data sets well enough so that an inventory is not needed.

If not enough information exists for the team to make a recommendation the review may be conducted by a conference call. Based on this review the data set team leader develops a one-page issue paper with a recommendation on how to proceed. **The data set team leader, lead SODA, and the lead ADDA need to closely coordinate during the review and formulation of the team's recommendation so that a quick decision may be reached.** The recommendation will either be

(1) Enough data exists for the team to develop data elements, standards, and codes for its assigned data set(s), or
(2) Not enough information exists and a limited inventory will be needed.

If the recommendation is for a limited inventory the issue paper will need to list the states to be inventoried and explain why the selected states were chosen. In determining which states should be inventoried, states heavily involved in the program area of the data set(s) should be considered as well as those not represented by team members.

Process Decision

The team's recommendation is sent to the lead SODA, who coordinates the decision process. The decision on the recommendation is made by the lead Associate State Director and the lead Assistant Director. This decision needs to be made quickly so that the team can proceed with its work of developing data elements, standards, and codes, or begin the inventory without team members having to return to their offices.

Part 2
Developing Data Standards Without Inventory

Development of Data Elements and Data Entry

The purpose of this step is to compile for the data set(s) a comprehensive list of data elements to describe the information needed for BLMs management. Using information gathered from the DED, other automated systems, other agencies, and personal knowledge, the team compiles data elements for the assigned data set(s). All possible data elements should be listed without concern for duplicative data elements, data elements with similar definitions that could be combined, or data elements with the same name but different definitions, standards, or codes. The analysis process, which follows this step, eliminates duplicates and generates unique definitions, standards, and codes.

The information generated in this step will be entered into the Data Standards program, using dBase lll software (see Appendix 4). The key part of this step is that all the information for each data element has to be entered. (See Appendix 5 for instructions on using the data entry worksheet.) The data for each data element may be placed on the data entry worksheet for entry or it may be entered directly into the program, depending on how the team is organized and wishes to work. Where there's not enough space on the program, e.g., codes, a hard copy of this information has to be included in the data set report. If spatial (graphics) standards exist for any of the data elements, these standards also have to be provided in hard copy (final report only).

Data Analysis

With a complete printout report for each data set, sorted by data element name, the team begins its analysis performing the following tasks for each data set:

(1) eliminate duplicate data elements,
(2) refines data elements that appear to be the same or compatible by preparing consistent data element names, definitions, and standards for elements with the same type of data, and
(3) adds new data elements, definitions, standards, and codes as needed.

The analysis involves reviewing the definition and standards for each duplicate data element name to ensure that apparent duplicates are actually duplicates. If the definition and standards differ, then the data elements are not true duplicates. For example, one data element for a species of a plant may be named, "Plant Name," whereas another data element may contain the same data but be named "Vegetation Name." The team may decide that these two data elements are the same and determine the most suitable name. If no standards exist, the team must prepare them.

The team should carefully make these types of changes to prevent the loss of different data needs. Where meanings are unclear, the team needs to confer and determine exactly what type of data the dataelement was meant to represent. Data elements that are true duplicates are deleted.

Upon completing its first analysis, the team updates the data standards program with the revised data, deleting data elements and revising data element names, definitions, and standards.

During the analysis process the team maintains a list of data elements by name, number (if it exists), and source (i.e., system where located), which will be replaced by the data elements, definitions, standards, and codes formulated during the analysis process. This listing is included as part of the data set report.

The data set team runs a second report and repeats the process until satisfied that all duplications have been eliminated and the report accurately represents the data being collected and needed by Bureau field offices.

Determining Corporate and Noncorporate Data

After compiling a list of data elements, the team determines in which data category (corporate or noncorporate [formerly called discretionary]) each data element should be placed. Corporate data will be standardized bureauwide. Noncorporate data will not be standardized bureauwide but may be standardized on a state, district, or area basis. The data set team then sorts the data into corporate and noncorporate types and runs a report for each type (see Appendix 4 for instructions on operating the Data Standards program).

BLM's corporate data is that needed throughout the Bureau--data that must be shared or combined among offices, usually through the computer. Corporate data is to be standardized (1) to ensure common understandings and meanings throughout the Bureau and (2) to allow data to be easily combined and quickly transmitted between offices. Standards allow data sharing and exchange among agencies. Standard terms, definitions, codes, and units of measure permit the use of relational data base management, which is planned for the Interim and Target Systems. Without standardization, BLM's corporate data cannot be computerized.

The data set team will use the following criteria to determine corporate data (a data element need meet only one criterion to be considered corporate):

(1) The data element is needed in or supplies input to a Washington Office required report.
(2) The data element is shared among states or with the Washington Office.

(3) More than one state is gathering and using the same data, even if it is not shared among States. If same data is being gathered, it should be standardized even if it is not computerized.
(4) The data element provides data needed to respond to many questions at the field or Washington office level.
(5) The data element is subordinate information needed to obtain required information. For example, in the formula pay - taxes - insurance = net pay, net pay is the required information, and pay, taxes, and insurance constitute subordinate information needed to calculate net pay.
(6) The data element is needed to document legal transactions required to support the Bureau's mission.

The team then updates the data standards program with its decisions on the data categories and, after the program has been updated, runs a list of corporate data elements and their characteristics. **The team leader sends a copy of this draft list, through their SODA, to the lead assistant director's data administrator, who sends copies to other data set teams to reduce the chance of different teams working on the same data elements at the same time.** The other team leaders review these lists and, if needed, call the originating team leader to negotiate which team will take the lead on a particular data element.

Developing Recommended Data Standards

The purpose of this step is to compile for the data set a comprehensive list of corporate data elements to describe the information needed for BLM's management. Although involving only the data elements on the final corporate list, generating recommended definitions, data standards, and codes is the most critical step in the data standardization process. The analysis in this step requires determining if standards already exist for each data element in the data sets being developed. If standards already exist, the team must decide either to adopt existing standards or propose new ones. If standards do not exist, then the team must generate them.

The complex and lengthy process of compiling definitions, standards, and codes for the identified data elements on the corporate list involves the following steps:

(1) Comparing proposed data elements with the application 2006 in the current data element dictionary.
(2) Comparing proposed data elements with the data element dictionary.
(3) Comparing proposed data elements with other Bureau stand-alone automated systems (such as Recreation Management Information System).
(4) Comparing and coordinating proposed data elements with automated systems and standards of other agencies, or organizations, particularly resource managing agencies.

(5) Considering definitions, standards, and codes submitted by team members

The first step in the comparison process is to check all the data elements on the corporate list against the BLM data element dictionary. During the interim period, one dictionary will be in use, the current applications data element dictionary. It will include application 2006 which will contain all approved corporate data elements.

The team first compares the corporate list to application 2006. In making the comparison, the team should look for data elements with the same name as the element being compared or with similar names that mean the same thing. As in developing the data element lists, the team may find that several data element names describe the same data.

If a match (same data element name, definition, standard, and code) is found in the application 2006, further search and work are not needed. The team just needs to note in the corporate list that the data element is already included in the application 2006. If a data element on the corporate list cannot be matched with the application 2006, then the rest of the data element dictionary should be reviewed for matches.

For each matching data element, the team should thoroughly review the definitions, standards, and codes in the data element dictionary. Many of the old data elements, definitions, standards, and codes have never been used and may be outdated. The review should determine if the previous data elements, definitions, standards, and codes are still suitable for the way the data element is being used or being proposed for future use.

One of two decisions may result from this review:

(1) The data element definition, standards, and codes in the old data element dictionary are adequate and should be placed in application 2006, or
(2) The data element definition, standards, and codes in the old data element dictionary are not adequate and need to be revised before being proposed as corporate data.

If the old data element definition, standards, and codes are inadequate, then the team prepares a new definition and list of standards to be used to record the data and possibly a new data element name. But the team must first conduct more analyses.

The team must review other automated systems for data elements related to the subject matter of the data sets. If other systems have definitions, standards, and codes for proposed data elements, the team must review these, adopting suitable ones and improving those that are not fully suitable. The team then uses the results of the analysis of other Bureau automated systems in the final analysis process of developing definitions, standards, and codes for the data elements they are working with.

Note that during the analysis process the team has to maintain a list of data elements by name, number if one exists, and source (i.e., system where located), which will be replaced by the data elements, definitions, standards and codes developed during the analysis process. This listing is included as part of the data set report.

In setting definitions and standards for BLM data elements, the data set team must consider definitions and standards used or needed by other agencies. Particular attention must be given to incorporating and using standards that are proposed for or have become Federal Information Publication Standards (FIPS) by other agencies. These standards are generated and reviewed by other agencies with an intent to exchange information.

The final step of the process is to generate definitions, standards and codes for the data elements on the corporate data list. The team should determine in advance whether it can develop definitions and standards independently or if it needs Service Center help. If the team needs help, the team leader should arrange with the lead state office data administrator to have a Service Center specialist join the team.

For data elements whose definitions and standards have been compiled elsewhere (data element dictionary, other automated systems, other agencies), the team must decide which to adopt. For data elements that have no definitions or standards, the team must generate them, including a data element name, definition, standards, and codes.

The following rules are to used in compiling definitions:

(1) The definition of the data element being defined should not contain the name of the element itself.

(2) The definition should describe the meaning and purpose of the data being defined and should not contain physical characteristics related to the existing data processing system.

The product of the analysis will be a data element name, a listing of all possible aliases, a definition, standards, and codes for each data element on the corporate list. The definition and list of standards and codes will be either taken from the data element dictionary or consist of new ones, revised from an existing data element or prepared by the team.

Preparing Data Set Reports

Required elements of data set reports include the following:

(1) Letter of Transmittal to the lead assistant director's data administrator.
(2) Table of Contents of the data set report.
(3) Team Membership List, including office of each member.
(4) Recommendation Issue Paper on the process to be followed by the team.
(5) Consultation and Coordination (persons and agencies who participated in the standard development process and the roles they played).
(6) Complete Data Report (with attachments as needed) showing proposed corporate data elements and their basic characteristics (ie., items 1 thru 14 from the data entry worksheet).
(7) Findings of Comparison between Proposed Corporate Data Elements and Data Elements currently within the data element dictionary, and other Bureau automated systems (for each data element on the corporate list, where appropriate, a list of data elements by name, number if it exists, and source (i.e., system where located), which will be replaced by the data element, definition, standards, and codes developed by the team during the analysis process.
(8) Non-Corporate Data Report showing data elements not proposed for standardization and their basic characteristics.
(9) Data Disk(s) containing all data elements, corporate and noncorporate (Data.dbf).

Preparing Final Data Set Reports

The final report will require an additional section in which the team leader discusses problems, areas of conflict (major disagreements between states), and success of the process, and makes suggestions for improvement. The major purpose of this section is to alert the lead ADDA to problem areas and unresolved conflicts that they need to be aware of before recommending approval of the data elements and standards.

The final report must also provide a list of all data elements with spatial characteristics grouped in logical "themes" for use in a geographic information system (GIS). For instance all elements related to elk calving would be grouped into a theme of "elk calving" which would be displayed polygonally on a GIS. For each theme, the team must provide the following information:

(1) Scale(s) at which information is generally displayed, and

(2) Any industry or professional standard or commonly used symbols and/or colors for the various attributes.

Part 3
Development of Data Standards With Limited Inventory

Limited Data Inventory

For some data set assignments, a lack of data from the DED, other Bureau automated systems, and other agencies results in the need to conduct a limited inventory before beginning the data standardization process. The purpose of the inventory is to collect information within the subject area of the data set(s) on the data now being used by the Bureau. The inventory should include pertinent data from maps, official case files, computer programs, forms, reports, data element dictionaries, or plans required to manage the public land resources.

The inventory process must represent all data collected or used by BLM. The following are suggested methods for conducting the inventory:

(1) Distribute the inventory forms (data entry worksheet from Appendix 5) to each district office program lead for completion,

(2) Distribute the inventory forms to key knowledgeable individuals within the State for completion, and

(3) Form an in-state team to conduct the inventory and complete the forms.

The data set team leader prepares a memorandum (see Illustration 4) transmitting the inventory packet to the state directors of the states selected to participate in the limited inventory. Prepared for the lead state director's signature and forwarded through the state office data administrators, the memo lists the data set team members, the data sets to be inventoried, and the deadline for completing the inventory. The team leader forwards a copy of this memo (including items 1 and 2 below) to the Bureau Data Administrator, the lead assistant director's data administrator, the Service Center Data Administrator, and all state office data administrators.

The data set inventory packet will contain the following (see Appendix 4):

(1) Instructions,
(2) Definitions,
(3) Data entry forms, and
(4) A personal computer (PC)-compatible diskette containing a dBase III Plus (data) program to use in recording the inventory. **Note: use only 360 KB DS/DD formatted disks for recording the inventory data.**

The state office data administrators (SODAs) from the states conducting the inventory ensure that their states complete the inventory within the deadline. The SODA should train the people requested to do the inventory, explaining the data classification structure, standardization process, purpose, and importance. All data must be submitted on diskette and in a printout (See data standards program directions in Appendix 4 of how to run a complete report.) Inventory participants should submit to their SODA a separate disk(s) and other data) for each data set. **Data from more than one data set should not be combined on the same disk.** All data entry forms within each state should be submitted to the SODA for filing. SODAs should check these diskettes for completeness, ensures that each diskette contains data for only one data set, and copy the diskettes before submitting them to the lead SODA. State inventory data should not be consolidated. In fact, the diversity of answers from any one state is desirable as long as all information requested on the data entry form is provided in the proper format.

Upon receiving the inventories from the states, the lead SODA

(1) Checks off the submissions as received and copies the diskettes,
(2) Eliminates duplicates of any attached graphic symbols and scales provided in response to item 8 on the inventory form instructions (see Appendix 3),
(3) Promptly sends the inventory to the data set team leader so that it can be evaluated.

If a state is not meeting the deadline, the lead SODA should go through the state director to get the inventory submitted as promptly as possible.

Consolidation and Analysis of Inventory

Upon receiving the inventory diskettes, the data set team leader combines all state submittals into one program for each data set. (See data standards program instructions, Appendix 4). At this point the team leader calls a team meeting to start the analysis process.

With a complete print out report for each data set, sorted by data element name, the team begins its analysis performing the following tasks for each data set:

(1) Analyze the information from the inventory.
(2) Eliminate duplicate data elements.
(3) Refine data elements that appear to be the same or similar by devising consistent data element names, definitions, standards, and codes for elements with the same type of data.
(4) Add new data elements as needed.

In analyzing the report to eliminate data elements with duplicate names, definitions, standards, and codes, the team reviews the definition and standards (if any were provided) for each duplicate data element name to ensure that they are duplicates. If the definition and standards differ, then the data elements are not true duplicates. For example, one state may name a data element for species of a plant, "Plant Name," whereas another state collects the same data but calls the data element "Vegetation Name." The team may decide that these two data elements are the same and determine the most suitable name for the data element.

The team should carefully make these changes to prevent the loss of different data needs. Where meanings are unclear, the team should consult with the office that submitted the data element name and description to clarify the exact type of data the data element was meant to represent. As part of this step in the analysis, the team should keep track, by data element, of the number of offices that collect or use a data element that was combined or eliminated. For data elements that are true duplicates, the duplicates are deleted.

Upon completing its first analysis, the data set team updates the data standards program with the revised data, deleting data elements and revising data element names, definitions, standards, and codes.

In updating, frequency of use will have to be increased. For example, if a data element with a once-a-week frequency of use is combined with a data element with a twice-a-week frequency of use, the new combined data element must be shown to have the higher, twice-a-week frequency.

The data set team runs a second report and repeats the process until satisfied that all duplications have been eliminated and the report accurately represents the data being collected by Bureau field offices.

Determining Corporate and Noncorporate Data Elements

After compiling a list of data elements, the team determines in which data category (corporate or noncorporate [formerly called discretionary]) each data element should be placed. Corporate data will be standardized bureauwide. Noncorporate data will not be standardized bureauwide but may be standardized on a state, district, or area basis. The data set team then sorts the data into corporate and noncorporate types and runs a report for each type (see Appendix 4, Attachment 3 for instructions on operating the Data Standards program).

BLM's corporate data is that needed throughout the Bureau--data that must be shared or combined among offices, usually through the computer. Corporate data is to be standardized (1) to ensure common understandings and meanings throughout the Bureau and (2) to allow data to be easily combined and quickly transmitted between offices. Standards allow data sharing and exchange among agencies. Standard terms, definitions, codes, and units of measure permit the use of relational data base management, which is planned for the Interim and Target Systems. Without standardization, BLM's corporate data cannot be computerized.

The data set team will use the following criteria to determine corporate data (a data element need meet only one criterion to be considered corporate):

(1) The data element is needed in or supplies input to a Washington Office required report.
(2) The data element is shared among states or with the Washington Office.
(3) More than one state is gathering and using the same data, even if it is not shared among States. If same data is being gathered, it should be standardized even if it is not computerized.
(4) The data element provides data needed to respond to many questions at the field or Washington office level.
(5) The data element is subordinate information needed to obtain required information. For example, in the formula pay - taxes - insurance = net pay, net pay is the required information, and pay, taxes, and insurance constitute subordinate information needed to calculate net pay.
(6) The data element is needed to document legal transactions required to support the Bureau's mission.

The team then updates the data standards program with its decisions on the data categories and, after the program has been updated, runs a list of corporate data elements and their characteristics. The team leader sends a copy of this draft list, through their SODA, to the lead assistant director's data administrator, who sends copies to other data set teams to reduce the chance of different teams working on the same data elements at the same time. The other team leaders review these lists and, if needed, call the originating team leader to negotiate which team will take the lead on a particular data element.

Developing Recommended Data Standards

The purpose of this step is to compile for the data set a comprehensive list of corporate data elements to describe the information needed for BLM's management. Although involving only the data elements on the final corporate list, generating recommended definitions, data standards, and codes is the most critical step in the data standardization process. The analysis in this step requires determining if standards already exist for each data element in the data sets being developed. If standards already exist, the team must decide either to adopt existing standards or propose new ones. If standards do not exist, then the team must generate them. The complex and lengthy process of compiling definitions, standards, and codes for the identified data elements on the corporate list involves the following steps:

(1) Comparing proposed data elements with the application 2006 in the current data element dictionary.
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For each matching data element, the team should thoroughly review the definitions, standards, and codes in the data element dictionary. Many of the old data elements, definitions, standards, and codes have never been used and may be outdated. The review should determine if the previous data elements, definitions, standards, and codes are still suitable for the way the data element is being used or being proposed for future use.

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The team must review other automated systems for data elements related to the subject matter of the data sets. If other systems have definitions, standards, and codes for proposed data elements, the team must review these, adopting suitable ones and improving those that are not fully suitable. The team then uses the results of the analysis of other Bureau automated systems in the final analysis process of developing definitions, standards, and codes for the data elements they are working with.

Note that during the analysis process the team has to maintain a list of data elements by name, number if one exists, and source (i.e., system where located), which will be replaced by the data elements, definitions, standards and codes developed during the analysis process. This listing is included as part of the data set report.

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Preparing Data Set Reports

Required elements of data set reports include the following:

(1) Letter of Transmittal to the lead assistant director's data administrator.
(2) Table of Contents of the data set report.
(3) Team Membership List, including office of each member.
(4) Recommendation Issue Paper on the process to be followed by the team.
(5) The Organizational Areal of Inventory (BLM offices that participated in the inventory process for the data set)
(6) Consultation and Coordination (persons and agencies who participated in the standard development process and the roles they played).
(7) Complete Data Report (with attachments as needed) showing proposed corporate data elements and their basic characteristics (ie., items 1 thru 14 from the data entry worksheet).
(8) Findings of Comparison between Proposed Corporate Data Elements and Data Elements currently within the data element dictionary, and other Bureau automated systems (for each data element on the corporate list, where appropriate, a list of data elements by name, number if it exists, and source (i.e., system where located), which will be replaced by the data element, definition, standards, and codes developed by the team during the analysis process.

(9) Non-Corporate Data Report showing data elements not proposed for standardization and their basic characteristics.

(10) Data Disk(s) containing all data elements, corporate and noncorporate (Data.dbf).

Preparing Final Data Set Reports

The final report will require an additional section in which the team leader discusses problems, areas of conflict (major disagreements between states), and success of the process, and makes suggestions for improvement. The major purpose of this section is to alert the lead ADDA to problem areas and unresolved conflicts that they need to be aware of before recommending approval of the data elements and standards.

The final report must also provide a list of all data elements with spatial characteristics grouped in logical "themes" for use in a geographic information system (GIS). For instance all elements related to elk calving would be grouped into a theme of "elk calving" which would be displayed polygonally on a GIS. For each theme, the team must provide the following information:

(1) Scale(s) at which information is generally displayed, and

(2) Any industry or professional standard or commonly used symbols and/or colors for the various attributes.

Chapter 5
Review & Approval

After completing the draft data set reports, the lead state office data administrator (SODA) sends them to the lead assistant director's data administrator (ADDA), the Service Center Data Administrator (SCDA), and all SODAs for a concurrent review. (See Illustration 5 for a sample request for review memo.) The request for review should include the following items:

(1) Name of the data set assignment to be reviewed.
(2) Deadline for returning comments to the lead SODA.
(3) Review points and procedures. (See below.)

The associate state directors, SODAs, lead ADDAs, and the SCDA ensure that each data set report is adequately reviewed by specialists and management, within their organizations (i.e. state office, Washington Office, and Service Center). They consolidate their organization's comments into one set, eliminating duplicate comments and resolving conflicts by working with the commenters. Then they send the consolidated comments to the data set team leader through the lead SODA.

Each SODA shall train the reviewers of each draft data set report. Concepts covered in the training should include at least an introduction to what a data element is and how they are used, what a good definition is, what standards are, and what codes are. Also to be covered are the SODA's expectations of what the reviewers are to review (following), and any format requirements for the review.

The reviews of the draft data set reports must have the following review in each state:

(1) The State Office program leads of all programs which would use the information, and
(2) At least one District Office and one Resource Area in that same District Office must review the draft report; participants should include any specialists who would normally use such data in their duties.

Reviewers should address the following points:

(1) Should the data element be considered corporate or noncorporate? List data elements that should not be corporate or noncorporate.
(2) Are the proposed data elements clearly and accurately described?
(3) Should more data elements be added to the lists? If so, then the reviewer should submit a data inventory form with the pertinent information on the data element recommended for addition.
(4) What is the rationale for recommended changes or additions?

(5) Are data elements compatible for all program uses?
(6) Do the standards for each data element apply to all programs that would use the data elements?
(7) Are the definitions correct?
(8) Are more or fewer codes needed and are they correct?

The Washington Office, Division of Information Resources Management, Branch of Records and Information Security (WO 771) will ensure that information in the report for each data element complies with data security requirements.

The review in the Washington Office by the Assistant Director's Data Administrators (ADDA's) must be as complete as that of the SODA's. The ultimate responsibility for the quality of the data elements lies with the lead ADDA, and thus must ensure that the lead state has the support necessary to produce a quality product and complies with the WO comments on the draft report. ADDA reviews should address the following:
(1) Duplicate data elements within the same report as well as between reports,
(2) Unnecessary data elements with regards to management needs and where data elements can be combined without producing composite data elements,
(3) Use of codes instead of separate data elements, and
(4) Data elements which actually belong with other data set assignments.

Depending on the complexity and number of comments received on the draft reports, the data set team leader may schedule a team meeting to review comments and refine the report. The team or team leader revises the draft reports and prepares final data set reports. If the comments cause a substantial change in the draft report, the team leader may decide to request a second review. If a second review is felt to be needed a second draft report is prepared and circulated again through the review process. The team leader then sends the final reports to the lead assistant director's data administrator (ADDA) through the lead SODA. The lead ADDA verifies that the comments were handled and sends the final report to the Bureau Data Administrator (BDA). At the same time, all material accumulated by the data set team (files, data disks) are also sent to the BDA for retention. At this time the accumulated data entry forms may be discarded.

Upon receipt of the final data set report, the BDA verifies that the report is complete and contains all the required information and certifies that the data set reports have been completed. The BDA then reports to the Field Committee that the data set(s) reports that have been completed, and forwards the reports to the Service Center Data Administrator for data modeling.

Chapter 6
Data Modeling

The Bureau Data Administrator (BDA) will forward the final data set report to the Service Center, Chief Division of Data Management (SC-320) for incorporation into the Bureau's Logical Data Model (LDM). The modeling of the data set may find duplication of data elements that are used in other programs or applications. Any duplicate or unnecessary data elements are reported to the BDA along with applications or programs that use the data element.

The process of modeling data set standardized data may require consultation with the BDA, ADDAs, SODAs and the data set team leader to determine use of the data, validate data relationships, and resolve data definition issues. The LDM involves the grouping of the data into entity and attribute (data element) relationships. A data dictionary (the LIS data dictionary) is being compiled to support the LDM. As new data is incorporated into the LDM, the dictionary will be modified and the elements given a name description consistent with a standard naming convention specified by the BDA and cross-referenced to the data set, data element, and description originally submitted with the final data set report. The pertinent sections of the LDM and data dictionary will be forwarded, as amended, to the BDA, ADDAs, SODAs and data set team leader for review and concurrence. The LIS data dictionary will also be provided, through the BDA, as a source for ongoing or future data set inventories.

The LDM process will provide the BDA with an analysis of potential data conversion issues and workload associated with programs and applications affected by data element modifications. The BDA is responsible for coordinating data base programming changes, where practical, including the implementing of a specific resource (data set) application at one or more test sites (Casper, Farmington, or other) for validation of the data elements and their relationships, as defined in the LDM. The LDM will be used as the framework for developing of the test application data base design. Chapter 8 describes the implementation process.

Chapter 7
Spatial and Cartographic Standards

After the final Data Set Standardization Report is sent to the ADDA's and approved by the BDA, it will be sent to the Service Center Branch of Target Systems Data Modeling for two tasks: logical data modeling and development of GIS digitizing input and output (electronic display or hard copy thematic map) standards for themes and associated attributes. These will be placed into a Symbology Dictionary.

The Spatial-Cartographic Standards Team (SCST) led by Mike Hutt (SC 671) and made up of cartographers and GIS specialists from across the Bureau is responsible for overseeing the development of the GIS standards. The Service Center Branch of Cartography (SC 672) will develop the standards. To do this they will receive the approved Final data set reports from the BDA and develop draft standards for digitizing input and output (electronic display or hard copy thematic map) for the necessary data elements. These standards will be for the identified themes and attributes at various scales and for a variety of data display needs.

The draft standards for spatially displayed theme and attributes will be reviewed by the states through the SODA's and by the WO through the ADDA's. The data administrators will involve GIS specialists and program specialists in the reviews. The Division of Planning and Environment (WO 760) will review from the aspect of themes appropriate to the planning process. Appropriate SC personnel including the Branch of Resources under SC 320 will also review the draft standards.

After comments are received, the Branch of Cartography will develop the final standards and send them to the BDA. At this point, WO 760 will be able to identify which themes and attributes should be mandatory for resource management plans and which should be optional or not necessary. WO 760 will issue directives on such planning designations.

Chapter 8
Implementation

After completion of modeling, the Bureau Data Administrator issues to the field an instruction memo on the new data elements and standards (including codes) for each group of approved standards. The memo will discuss revisions of existing applications, programs, and systems and tell when the data elements will be used for what applications and programs.

Data standards must be implemented immediately in all automated applications by a specified date or partial implemented by a specified date. Or implementation must be deferred until the target system is operating. When revisions of automated systems are planned, (within the interim period) the person responsible performs a workload analysis to determine how many workmonths needed to convert to the new data elements and standards. The results of the analysis are built into the annual work plan.

The instruction memo also directs that all new applications, systems, and programs developed after the memo's release use the new data elements and standards. Any manager generating and using different elements and standards will have to convert to and use the new data elements as directed.

The Bureau Data Administrator will direct the Service Center Data Base Administrator (SC DBA) to assign numbers or similar identifiers to data elements and enter the data elements and standards into the new Land Information System data dictionary (not the current dictionary). The Bureau will not use the new data elements until the validation process is completed. After validation, the SC DBA will allow access to the new data elements and standards on a specific date and will be responsible for documenting differences, changes, and deletions between the old data element dictionary and the LIS data dictionary. The SC DBA will also update the BLM library system with a paper copy of the new data elements and standards.

Chapter 9
Data Element Change Process

Process still in development. Will be included in updated versions of the handbook.

Appendix 1
BLM Enterprise Data Model

(The following is an exerpt from the Introduction to the BLM Enterprise Data Model of October 1989.)

The Bureau of Land Management (BLM) has recognized the value of its information and has determined to manage this information as a valuable asset. Realizing the necessity of thoroughly defined information requirements before committing to the procurement of new hardware and software and before undertaking large system development efforts, the BLM is performing planning and analysis to identify and define its information needs.

Defining the functions of an enterprise creates a road map leading to finer levels of analysis and development. Once functions are identified and defined it is possible to identify and define the items of information used and/or generated by those functions. The items of information can be mapped to the functions and the affinity that exists between the items of information can be analyzed. This provides the basis for the development of automated information systems. The documented combination of the BLM functions and the items of information involved in those functions is the BLM Enterprise Data Model. The components of the BLM Enterprise Data Model are as follows:

Functions, Sub-functions and Processes

Functional Decomposition Diagrams

Functional Decomposition With Inputs and Outputs

Subject Areas and Data Classes

Data Flow Diagrams

Entity Relationship Diagrams

Association Matrices

BLM-EDM Reports (Encyclopedia, Hierarchy, Object)

Affinity Analysis Report

The BLM is committed to the concept of flexible system development through the use of a thoroughly defined and structured data resource. The Enterprise Data Model is the first major step toward this effective data resource as it reveals the similarities in functions and information needs throughout the BLM mission and functional programs. It is evident from this work that the Bureau would benefit from a shared data base and shared systems environment. However, the results of the Enterprise Data Model show that additional work in defining the lower levels of BLM functions and data is necessary to effectively prepare the Bureau for its Target System design and development.

During the summer and fall of 1989, National Systems & Research Company (NSR) has worked with BLM personnel to determine the information needs of the Bureau and BLM personnel. This report summarizes the process and results of that effort.

A. Purpose

Historically, data processing groups have applied a procedure-oriented approach to the development and support of automated information systems. This procedure-oriented technique has often resulted in the design of systems which are unresponsive to the users, are resource intensive and are difficult to modify. However, a data-oriented approach in which data are correctly identified and structured will enable the rapid development of flexible systems.

The BLM is committed to the concept of flexible system development through the use of a thoroughly defined and structured data resource. The Enterprise Data Model is the first major step toward this data resource in that the top level overview of the Bureau's data needs will be defined and related to the appropriate functions and processes. This overview will also give guidance in planning the subsequent steps needed to build the effective data resource required by a data-oriented approach to systems development.

B. Methodology

The effort to create an Enterprise Data Model for the BLM was undertaken to avoid the pitfalls that other organizations have experienced in their attempts to automate. The actions taken to accomplish this goal, components of Information Engineering, are outlined in the BLM Data Administration Preplan (February, 1989).

C. Information Engineering

The purpose of Information Engineering is to ensure that the information needs of an organization are at the core of its automation effort. Information Engineering does NOT consider the automated tools (e.g., applications and hardware) used to access, manipulate, and maintain information. Those are in the realm of software and hardware engineering. Considering automated tools at this stage risks compromising the goals of Information Engineering.

Figure 1.2-1 illustrates the "building block" structure of Information Engineering. The bottom block (or first block) represents the creation of an Enterprise Data Model, which reflects the functions of the organization and the information that each function uses or creates. Once the functions are defined, the information that each function uses or creates is identified. Logically grouping these functions and their corresponding data classes provides the basis for the strategic data plan.

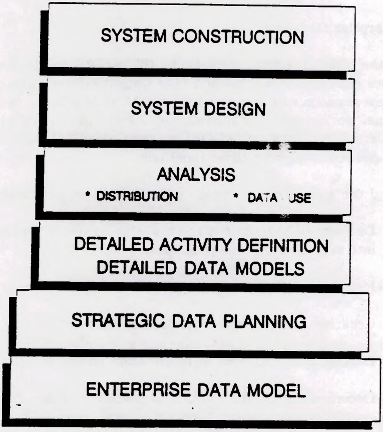


Figure 2: Information Engineering Foundations

The second block of Figure 1.2-1 represents the development of the strategic data plan, which defines among other things the direction for future system design efforts, standards for creating and maintaining data, and policies regarding data security, integrity, ownership and stewardship. In fiscal year 1990, the Bureau is developing these policies and standards and establishing a strategic data administration document for the Bureau.

Together these blocks form the foundation on which a well-integrated set of data systems can be built to meet the needs of the BLM. This foundation provides BLM top management a solid basis for using their information resources.

The third block of Figure 1.2-1 represents the further breakdown of functions into activities and the development of data models reflecting the logical system design. Once completed, the detailed physical data flow diagrams and structure charts can be produced as a part of the analysis and system design (depicted by the fourth and fifth blocks). The sixth block reflects the actual construction of the system.

D. BLM Enterprise Data Model

To develop the BLM Enterprise Data Model (BLM-EDM) and lay the ground work for a strategic data plan, the NSR staff and BLM Data Administration team arranged week-long interview sessions with personnel from each BLM mission or functional program. BLM personnel worked with the Bureau Data Administrator (BDA) and Assistant Directors' Data Administrators (ADDA) in identifying BLM functions and the information needed to support those functions.

NSR provided the guidelines for creating the BLM-EDM and assisted BLM employees in:

- Defining BLM functions and breaking down the functions into sub-functions and processes,
- Identifying the data classes used or created by the processes,
- Creating graphic representations of the relationships among data classes,
- Diagramming the flow of information among processes,
- Documenting the distribution of processes within the BLM.

Through this process a draft BLM-EDM evolved that was continuously reviewed and modified each week as BLM program personnel added the relevant information associated with their scope of responsibilities.

The BLM Data Administration Team and NSR staff reviewed and refined the draft BLM-EDM to ensure it accurately and consistently reflected the current functions of the Bureau. The BLM-EDM provides the framework needed to continue the Information Engineering effort towards establishing a strategic data plan, developing detailed data models, and providing guidance for the Target System Vendor.

E. Information Engineering Workbench (KnowledgeWare, Inc.)

A Computer Aided Software Engineering (CASE) tool was selected to support the collection and maintenance of information gathered during this effort. The Planning Information Engineering Workbench (IEW) and Analysis IEW created by KnowledgeWare, Inc. were chosen as the best CASE tools available to support the needs of the BLM Enterprise Data Model development. KnowledgeWare's IEW is an integrated off-the-shelf software package. Using KnowledgeWare, BLM data planners and data administrators quite easily can add or modify information germane to the planning and development of the BLM modernization effort.

F. Results of Interviews

This section presents a consolidated version of the information collected in interviews of BLM personnel during the past five months. This includes:

- The BLM enterprise model in both graphic and textual descriptions,
- A description of the broad classes of information the BLM uses in support of the functions identified in the enterprise model,
- Data flow diagrams reflecting an overview of information flows among related functions,
- Entity relationship diagrams which show the associations among broad classes of information,
- Matrices which show the associations between broad classes of information and functions,
- Matrices which show where functions are physically executed within the BLM,
- Matrices which show which functions are executed by each of the BLM programs.

G. Enterprise Data Model

The basic component of the BLM-EDM is the enterprise model (enterprise is a generic term used in lieu of business or governmental entity). The enterprise model is the identification and break down of enterprise operations. Which are referred to as functions.

Defining the functions of an enterprise creates a road map leading to finer levels of analysis and development. Once functions are identified and defined it is possible to identify and define the items of information used and/or generated by those functions. The items of information can be mapped to the functions and the affinity that exists between the items of information can be analyzed. This provides the basis for the development of automated information systems. The documented combination of the BLM functions and the items of information involved in those functions is the BLM Enterprise Data Model.

H. Functions, Sub-functions and Processes

Functions are the building blocks of the enterprise model. A function can identify a large subject (e.g., urban development affairs), a very minute subject (e.g., production of a standard population statistics report) or a subject somewhere in between (e.g., analyze the demographic trends of a given neighborhood).

The BLM executes a large number of functions. This has resulted in an enterprise model with broad functions which have been broken down (decomposed) to three levels. To provide a point of reference, the following terms are used to describe the functions at each level.

> **Functions** - This is the highest level. During the interview sessions the functions identified represent large operational areas within the BLM, such as "Aviation" or "Procurement."
>
> **Sub-functions** - This is the second level. Sub-functions identify major functional areas of the BLM, such as "Program Administration" or "Authorization/Case Processing."
>
> **Processes** - This is the third level. Processes are functions which denote a decision point where an action takes place. The name of a process is normally an action-oriented noun, such as "Planning" or "Survey and Design."

I. Subject Areas/Data Classes

Subject areas and data classes are broad categories of information the Bureau uses or creates in carrying out BLM processes.

The inputs and outputs identified in the textual description of the Enterprise Data Model are "raw" items of information gathered during interviews with BLM personnel. Often, different names are used for the same type of information or one input/output may be a subset of another input/output. For example, "legal requirements" and "legal rulings" mean essentially the same thing; and "property regulations" is a subset of "regulations."

Subject areas and data classes were created by analyzing the inputs and outputs gathered during the interview process, combining redundant inputs and outputs, and removing subsets. Subject areas contain logical groupings of data classes. For example, all data classes which deal with the acquisition of goods and services for the BLM are grouped together under the subject area "acquisition data."

Appendix D contains a list of the subject areas and data classes defined for the BLM. The list is by data class within subject area. The corresponding KnowledgeWare name for each data class is listed to the right of each data class name (please note that the KnowledgeWare term Entity equates to data class). Definitions are also included for subject areas and data classes.

The following definitions are of the subject areas and data classes which are within the assignment of the Resource Management data set standardization teams. The following are the standard data sets (data class subject areas) which the Resource Management teams will address instead of the old assignments.

Analysis
Authorization
Compliance/Enforcement
Evaluation
Monitoring/Inspection
Plan
Report

Entity Type: ANALYSIS-ANALYSIS MODEL

Definition
Information needed to model or represent potential situations and conditions.

Comments

PROPERTY VALUE

Entity Type: ANALYSIS-BID/SALE RESULTS DATA

Definition
Economic and resource information gathered for the purpose of analyzing bids for sale decision making.

PROPERTY VALUE

Entity Type: ANALYSIS-CONDITION ANALYS DATA

Definition
Information used to describe and report on a situation at a given point in time.

PROPERTY VALUE

Entity Type: ANALYSIS-ENV ANALYSIS DATA

Definition
Examination of a proposed action to determine the environmental impacts of its implementation. It can be documented as a EIS/ROD, EA/NOI, EA/FONSI, administrative finding resulting in a categorical exclusion, or an action that is statutorily exempt.

PROPERTY VALUE

Entity Type: ANALYSIS-FEASIBILITY ANALYS DATA

Definition
Information used to determine whether a proposed project is economically and technically feasible.

PROPERTY VALUE

Entity Type: ANALYSIS-INTERPRETED DATA

Definition
Information that has been interpreted from preliminary/inventory data by the appropriate functional programs.

PROPERTY VALUE

Entity Type: ANALYSIS-ISSUE/POSITION PAPER

Definition
Documents which discuss a concern of certain BLM programs or groups, and identify alternatives and recommended courses of action.

PROPERTY VALUE

Entity Type: ANALYSIS-LAND CAPABILITY DETERMN

Definition
Information regarding the production potential of the land or mineral resources.

PROPERTY VALUE

Entity Type: ANALYSIS-LEGAL & REGULATORY DATA

Definition
Information which reflects the degree of flexibility in application, the economic impact, and the positive or negative impacts of a rule or regulation. Also includes the analysis needed to recommend Presidential signature or veto of an enrolled bill.

Comments
The idea is to analyze a rule or regulation in an effort to determine if its application will be so restrictive as to be counter productive.

PROPERTY VALUE

Entity Type: ANALYSIS-MIN OCCUR DETERMN/CLASS

Definition
Information regarding the classification of lands having the potential for the occurrence of minerals using guidance found in BLM Manual 3031 based on the potential presence or absence of valuable minerals.

PROPERTY VALUE

Entity Type: ANALYSIS-MINERAL ECONOMIC EVAL

Definition
The activities associated with analyzing data to determine the economic value of certain mineral commodities.

PROPERTY VALUE

Entity Type: ANALYSIS-MULTIPLE USE MGT ANALYS

Definition
Information regarding resource management decisions and their interactions.

PROPERTY VALUE

Entity Type: ANALYSIS-PRG REQD ANALYS METHOD

Definition
Methods of analysis required by a program.

PROPERTY VALUE

Entity Type: ANALYSIS-PROJ/PROPOSAL ANALYSIS

Definition
Proposal Analysis - Information needed to determine the potential effectiveness of a project proposal.
Project Analysis - Study of the functions of a project product facility or procedures to generate alternatives which will satisfy users' needs at the lowest possible cost.

Comments
Includes value engineering analysis, review of methods, schedule, objectives, etc.

PROPERTY VALUE

Entity Type: ANALYSIS-PROJECTION DATA

Definition
Information regarding analysis models needed to project alternatives in the future.

PROPERTY VALUE

Entity Type: ANALYSIS-R & D ANALYSIS DATA

Definition
Analysis of research proposals, projects and results, including the assessment of strengths and weaknesses and recommendations for future program direction.

PROPERTY VALUE

Entity Type: ANALYSIS-REAL ESTATE APPRAISAL

Definition
A report prepared by a qualified real estate appraiser that states the appraiser's opinion of value of a particular real estate property.

PROPERTY VALUE

Entity Type: ANALYSIS-RESOURCE ANALYSIS DATA

Definition
Information needed to analyze lands and natural resources that can result in a conclusion/finding and/or decision.

PROPERTY VALUE

Entity Type: ANALYSIS-RISK ANALYSIS DATA

Definition
Risk Analysis - An analysis of risks associated with potential losses of data, hardware, software, physical facilities, or personal injury due to identified hazards, and any measures determined necessary to reduce or limit the degree of each hazard.

PROPERTY VALUE

Entity Type: ANALYSIS-SITUATION ANALYSIS DATA

Definition
Information needed to assess real-time reactions to a given condition.

PROPERTY VALUE

Entity Type: ANALYSIS-THRESHOLD ANALYSIS DATA

Definition
Information needed to determine the point at which the situation/condition/population will deteriorate beyond acceptable tolerances or standards.

PROPERTY VALUE

Entity Type: ANALYSIS-TREND ANALYSIS DATA

Definition
Information regarding the analysis of a situation or condition over time.

PROPERTY VALUE

Entity Type: ANALYSIS-WORKLOAD ANALYSIS DATA

Definition
Information used to determine units of work related to time frame for accomplishment. Usually expressed in terms of work months, work years or full time equivalents (FTE).

PROPERTY VALUE

Entity Type: AUTHORIZATION-AGREEMENT/CONTRACT

Definition
Information regarding legal arrangements between lessees as to the inclusion of lands in the production units and designated operators, or any other authorizations to a third party by the lessee.

PROPERTY VALUE

Entity Type: AUTHORIZATION-AUTHORIZATION DOC

Definition
The document used in granting or acquiring the rights to use, enjoy, remove resources or property, occupy land or real property and to convey such right.

Comments
Examples include patent, quit claim deed, permit, lease, license, public land order, right-of-way, clear list, written agreement, sale contract, memorandum of understanding and security clearance.

PROPERTY VALUE

Entity Type: AUTHORIZATION-CUST/APP INFO

Definition
Information provided by the customer (applicant, lessees, permittee or proponent, mining claimant) requesting authorizations, including customer qualifications, customer plan of operation, application data, bid data, mining claimant notices and bond data.

PROPERTY	VALUE

Entity Type: AUTHORIZATION-DELEGATN OF AUTH

Definition
The official approval for a BLM employee to legally act on behalf of the Director.

PROPERTY	VALUE

Entity Type: AUTHORIZATION-LEASE STATUS DATA

Definition
Information regarding payment of rentals and royalties, and compliance with terms and conditions of authorizations.

PROPERTY	VALUE

Entity Type: AUTHORIZATION-LUP CONFORMANCE

Definition
Information needed to assure that any authorization granted will be in conformance with existing BLM resource management plan and management framework plan.

PROPERTY	VALUE

Entity Type: AUTHORIZATION-MGT DECISION INFO

Definition
Information related to the decision to grant or deny any proposal or application for authorization.

Comments

PROPERTY VALUE

Entity Type: AUTHORIZATION-MOU/IA

Definition
A legal instrument authorizing or documenting a cooperative agreement between two or more government agencies or other entities to accomplish common goals or goals which would benefit one or more participants. Includes interagency agreement, cooperative agreement, memorandum of understanding.

PROPERTY VALUE

Entity Type: AUTHORIZATION-PROPOSAL/APPLICATN

Definition
Information associated with the formal petition of any person, group, corporation, or association applying for, or proposing the granting of rights to public land, mineral or resources.

Comments
Includes land exchanges, royalty rate reductions.

PROPERTY VALUE

Entity Type: AUTHORIZATION-STIPULATION DATA

Definition
Information stated as a requirement in an authorization, including restrictions placed on the holder of the authorization to protect resources or other uses of public lands or to otherwise ensure

compliance with regulations.

Comments
These are usually appended to the authorizing document and become part of the document.

PROPERTY VALUE

Entity Type: AUTHORIZATION-SURFC AGY/CONSENT

Definition
Permission of a governing body responsible for the surface management of a given parcel of land for Federal minerals, or individual landowner for development of coal.

PROPERTY VALUE

Entity Type: AUTHORIZATION-TERMS & CONDITIONS

Definition
Standard provisions of an authorization specifying length of term and special conditions such as diligent development, rental and royalty payments, etc.

PROPERTY VALUE

Entity Type: COMP/ENFRC-BLM CITA/ARREST/WARNG

Definition
Issuance of a formal written notice of a violation of a law, regulation, or rule which may result in a fine or other penalty, or may result in arrest by a law enforcement officer and incarceration, or may be a written warning of a violation that may result in further action if the alledged violation continues.

PROPERTY VALUE

Entity Type: COMP/ENFRC-CIVIL PENALTY

Definition
The fine or action penalty associated with violation of a regulation that is not defined as a criminal act.

PROPERTY	VALUE

Entity Type: COMP/ENFRC-COMPLIANCE REPORT

Definition
A report prepared by a field inspector to document observations of conditions on site.

PROPERTY	VALUE

Entity Type: COMP/ENFRC-INCIDENT REPORT

Definition
A report by BLM staff which is the initial finding of unauthorized use of public resource.

PROPERTY	VALUE

Entity Type: COMP/ENFRC-INVESTIGATIVE FILE

Definition
An official file containing information, evidence, notes, photos, reports, and statements of persons interviewed in connection with an incident being investigated.

PROPERTY	VALUE

Entity Type: COMP/ENFRC-NON-COMPLIANCE NOTICE

Definition
A notification sent to an operator or individual informing him of failure to comply with legal requirements and setting forth required corrective actions. This notice is given to authorization holders.

PROPERTY VALUE

Entity Type: COMP/ENFRC-NOTICE OF SUS/MOD/CAN

Definition
Legal notice formally presented to a lessee, permittee, licensee, grantee or contractor changing, cancelling or suspending an authorization for a length of time. The notice identifies the reason for such action.

PROPERTY VALUE

Entity Type: COMP/ENFRC-REQ FOR ENFORCEMENT

Definition
A request by the authorized line manager to the law enforcement specialists to initiate enforcement activities.

PROPERTY VALUE

Entity Type: COMP/ENFRC-UNAUTH USE NOTICE

Definition
A notice issued by BLM to an unauthorized user in non-compliance or an unauthorized user of public resources which notifies them that they are unauthorized and must comply with regulations in a timely manner.

Comments
Includes use of mining claims for non-mining purposes such as establishing business or recreational use not related to mining.

PROPERTY VALUE

Entity Type: COMP/ENFRC-UNAUTH USE RESOLUTION

Definition
The information pertaining to the resolution of an unauthorized use of

public resources, either by payment of appropriate penalties and removal of the unauthorized facilities/activities, or by processing the appropriate authorizing documents to legalize the unauthorized activities.

PROPERTY **VALUE**

Entity Type: EVAL-EVALUATION PLAN

Definition
A written statement of objectives, activities and methods to accomplish a program evaluation.

PROPERTY **VALUE**

Entity Type: EVAL-EVALUATION REPORT(INT/EXT)

Definition
External Evaluation Report - Information about BLM prepared by other agencies/entities; for instance, the General Accounting Office or the Inspector General.
Internal Evaluation Report - Evaluations performed to assess the effectiveness of the Bureau's program activities or offices.

Comments
Fluid Mineral group includes "sale evaluation" (presale and postsale) in Internal Evaluation Report. They define this to mean determining economic potential of resource.

PROPERTY **VALUE**

Entity Type: EVAL-INTERVIEW DATA

Definition
Data gained by interviewing persons in the course of performing an evaluation.

PROPERTY **VALUE**

Entity Type: EVAL-PROGRAM REQUIREMENT

Definition
Information from the BLM functional programs that is to be the subject of the BLM evaluation process.

Comments
includes evaluation requests

PROPERTY VALUE

Entity Type: EVAL-PROGRAM REVIEW (INT/EXT)

Definition
Informal internal review of program management of external review (usually formal report) of BLM program management.

PROPERTY VALUE

Entity Type: EVAL-QUESTIONNAIRE DATA

Definition
Information on questionnaire used to gather data in an evaluation process; information includes the questions asked, the scope of the evaluation, and the response to the questions.

PROPERTY VALUE

Entity Type: EVAL-R & D EVALUATION

Definition
An R&D Technical Evaluation is an assessment, by a professional or professional team, of the technical merits of an R&D project. The technical evaluation can be done at any stage of the R&D process, including the project proposal stage, the active project stage, or a completed effort.

PROPERTY VALUE

Entity Type: EVAL-RESP TO EVALUATION REPORT

Definition
Program responses to the findings and recommendations in the completed evaluations.

PROPERTY VALUE

Entity Type: EVAL-TECHNICAL PROCEDURE REVIEW

Definition
A technical evaluation performed to determine whether BLM's performance is technically adequate.

PROPERTY VALUE

ntity Type: MGT PRIORITY-ADMINISTRATION

Definition
Priorities established by the President, Secretary of Interior or Assistant Secretary of land and mineral resources.

PROPERTY VALUE

Entity Type: MGT PRIORITY-BLM EXECUTIVE MGT

Definition
Priorities established by the Bureau Management Team, the Field Committee, and the Human Resource Development Committee. The BMT is made up of the Director of BLM, Assistant Director of BLM, and BLM State Directors. The Field Committee is made up of the Deputy Assistant Directors, the Associate State Directors and the Deputy Directors of the Service Center. The Human Resources Development Committee is a subset of the BMT.

PROPERTY VALUE

Entity Type: MGT PRIORITY-LINE/STAFF MGT

Definition

Priorities established for a state by the State Management Team and priorities established for a district by the District Management Team. The State Management Team is made up of the State Director, Associate State Director and District Managers. The District Management Team is made up of the District Manager, Associate District Manager and Area Managers.

PROPERTY VALUE

Entity Type: MGT PRIORITY-PROGRAM

Definition

Program activity thrusts considered to be of high importance.

PROPERTY VALUE

Entity Type: MON/INSP-FAC/SITE/CONDITN INSPEC

Definition

The activities involved in reviewing files and documents, and visiting sites to make visual assessments and measuring compliance with BLM authorizations, contracts, agreements, rules and standards.

PROPERTY VALUE

Entity Type: MON/INSP-HISTORICAL DATA

Definition

Background information, past reports and existing data used in planning, projections, authorizations and decision making.

PROPERTY VALUE

Entity Type: MON/INSP-METHOD

Definition
The activities prescribed by the program to monitor compliance with authorizations and standards, to determine compliance with contract requirements, and to inspect hazardous conditions, loss of property and reported incidents. In the case of LUP monitoring, there are three tiers. The first tier (Tier 1) concerns tracking decisions from the LUP (RMP/MFP) to assure that they are being implemented. The second tier (Tier 2) is to determine, once implemented, if the LUP decisions are successful. The third tier (Tier 3) is an overall evaluation of the LUP to determine if objectives are being met.

PROPERTY VALUE

Entity Type: MON/INSP-MONITORING PLAN

Definition
A step-by-step outline for review of the objective, scope, methods and activities involved in determining compliance to authorizations and standards. The plan may also be promulgated by a directive.

PROPERTY VALUE

Entity Type: PLAN-ACTIVITY PLAN

Definition
Detailed and site specific plan for management of a single resource program or plan element undertaken as necessary to implement the land use plan (RMP/MFP) decisions. Examples of activity plans are allotment management plans, habitat management plans, and watershed management plans.

PROPERTY VALUE

Entity Type: PLAN-EXTERNAL PLAN

Definition
Plans prepared by external agencies or user groups which are used to conduct BLM business.

PROPERTY VALUE

Entity Type: PLAN-FUNCTIONAL PLAN

Definition
Detailed plan for management of a specific Bureau function. Examples of functional plans include annual work plans, training plans, record management plans, LIS Master Plan, public affairs plans, compliance plans, etc. It may or may not be necessary to implement land use plan (RMP/MFP) decisions.

PROPERTY VALUE

Entity Type: PLAN-PROJECT PLAN

Definition
Detailed and site specific plan to implement an action specified in a land use plan or activity plan. Example could be construction of a reservoir called for in an activity plan. The project plan would be for construction of the reservoir. Project plans specify the detail necessary to implement the action. They include such things as locations, costs, survey and design, external permits, completion reports, etc.

PROPERTY VALUE

Entity Type: PLAN-RMP/MFP

Definition
A plan prescribed by the FLPMA that establishes in a written document the following:
1. land area for limited, restricted or exclusive use,
2. allowable resource uses,
3. resource condition goals and objectives to be attained,
4. program constraints and management practices needed to achieve the above,
5. need for an area to be covered by more detailed and specific plans,
6. support actions,

7. general implementation sequences,
8. intervals and standards for monitoring and evaluation, and
9. activity plans, project plans and plan of operation regarding data standardization.

Comments

PROPERTY VALUE

Entity Type: REPORT-AD HOC RPT/CORRESPONDENCE

Definition
Response to internal and external inquiries for general or specific information in regards to a Bureau function or action. Includes right of public inspection. May result in release of public information, sanitized information, or sensitive information depending on specific conditions.

PROPERTY VALUE

Entity Type: REPORT-EXTERNAL REPORT

Definition
A report required or prepared by an entity external to the BLM such as another bureau, the Department, GSA, OMB, or Congress.

PROPERTY VALUE

Entity Type: REPORT-FUNCTIONAL REPORT

Definition
Data or information collected on the Bureau's supportive functions, assembled and arranged for analysis, furnished from one office to another.

Comments
Includes implementation reports.

PROPERTY **VALUE**

Entity Type: REPORT-PROGRAM REPORT

Definition

Data or information collected on the Bureau's mission programs, assembled and arranged for analysis, furnished from one office to another.

PROPERTY **VALUE**

Entity Type: REPORT-PUBLICATION/MAP

Definition

Published materials and maps made available for purchase by the public, such as recreational and wilderness maps, land status maps, and other special documents.

PROPERTY **VALUE**

Subject Area: ANALYSIS DATA

Definition
Data used to perform an analysis or investigative procedures, or completed analyses used to form a conclusion or make a decision. This includes data needed for site, inventory, decision, research, NEPA compliance and other Bureau analysis efforts.

PROPERTY	VALUE

Subject Area: AUTHORIZATION DATA

Definition
Information used to approve or reject a request, application, or proposal to grant or acquire the rights to use, enjoy, remove, or occupy land, resources or real property.

PROPERTY	VALUE

Subject Area: COMPLIANCE/ENFORCEMENT DATA

Definition
Information about the exercise of compliance authority in support of a resources, lands, minerals, or trespass case, including collection for damages and impoundment.

PROPERTY	VALUE

Subject Area: EVALUATION DATA

Definition
Evaluation - Analysis of information, processes, decisions, proposals, standards, rules, procedures and organization to determine adequacy and appropriateness of program actions.
Internal Reviews - reviews of BLM specific projects.
Internal Control Review - reviews of methods BLM uses and their effectiveness with regards to efficient use of resources and to determine the adequacy of controls to prevent waste, fraud and abuse.

Technical Procedure Review - reviews of BLM's technical programs.
General Management Reviews - reviews of all activities within a jurisdiction, for example, a BLM state office.

PROPERTY **VALUE**

Subject Area: **MANAGEMENT PRIORITY DATA**

Definition
Information pertaining to setting priorities within the Bureau by identifying the activities that take precedence over other activities with regard to allocation of personnel, funding, management attention, time frame and administration directives.

PROPERTY **VALUE**

Subject Area: **MONITORING/INSPECTION DATA**

Definition
Monitoring is the review and documented results that establish if constraints, scope, stipulations, decisions, etc., that are a part of a plan, contract, authorization, etc., are being followed and if they are successful. In the case of authorizations, monitoring to determine if stipulations, scope of the authorization, etc., are being adhered to can result in a compliance notice.

PROPERTY **VALUE**

Subject Area: **PLAN**

Definition
Plans necessary to conduct the Bureau's business, including land use plans (RMPs, MFPs), activity plans, project plans, functional plans, scope and objectives.

PROPERTY **VALUE**

Subject Area: **REPORT**

Information Engineering Workbench Report
Object Summary Report
November 2, 1989 15:58:25 BLM EDM

Definition
Data or information collected, assembled and arranged for analysis, furnished from one office to another.

PROPERTY **VALUE**

APPENDIX 2
ACCESSING THE DATA ELEMENT DICTIONARY, BULLETIN BOARD, AND OTHER SYSTEMS

Introduction

The menu access to the data element dictionary, bulletin board, and index of other menu systems has been developed to facilitate easy access to these programs and aid those involved in the Bureau's data standards efforts.

When you have successfully logged on to the Honeywell DPS 8000, you will be greeted by a main menu of things to choose from (provided your UMC is one with special ..init file). The information on these and other menus will help in your work dealing with data standardization. Please read the user's guide, "Data Element Dictionary," before trying to use the inquiry programs. Also take advantage of your Key Word Index to help you review the data element dictionary. The key word index can be obtained from your State Office Data Standards Administrator(SODA).

Each SODA and data set team leader should become familiar with the Data Element Dictionary and its contents to help them develop data elements, definitions, standards, and codes for their data set.

**** IMPORTANT ****

Before you try to use the computer system, you must have a working knowledge of the computer or terminal you are using and how the operating commands entered on that computer or terminal affect the honeywell mainframe computer. If you lack this knowledge, call your local information systems manager and get training in computer or terminal operation and keyboard commands.

LOGGING ON TO DPS-8/70

1. LOG ON TO THE HONEYWELL USING LOCAL INSTRUCTIONS.

2. AFTER CONNECTION, THE SYSTEM WILL RESPOND:

   RCF . . . DATE
   OR
   PROGRAM NAME - TRANSMIT

3. THE SYSTEM THEN RESPONDS:

   BLM COMPUTER CENTER - DATE/TIME - CHANNEL

   USER ID - ENTER USER ID AND TRANSMIT[1/]

   PASSWORD - ENTER PASSWORD AND TRANSMIT

   CHARGE CODE - ENTER CHARGE CODE AND TRANSMIT

   CHARGE PASSWORD -ENTER CHARGE PASSWORD AND TRANSMIT

   TIME/SYSTEM MESSAGES
   NOOZ was updated 5/4/87 at 4:00 PM
   Type "INFO INDEX" to see headlines.

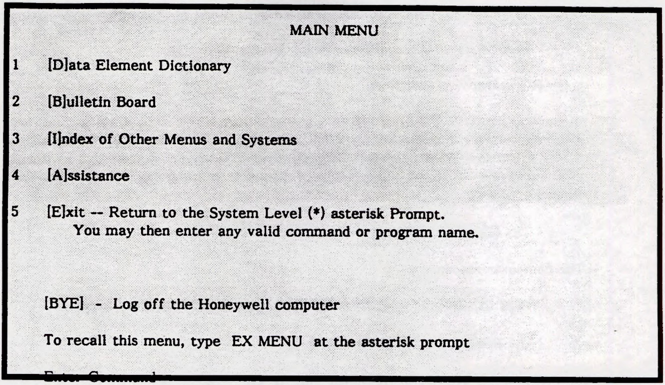
   ANY LOCAL MESSAGES

*

THIS IS THE SYSTEM-LEVEL PROMPT - WHEN YOU SEE THIS YOU KNOW YOU ARE LOGGED ON THE HONEYWELL!

1/TRANSMIT = CARRIAGE RETURN OR XMIT. MAY REFER TO ANOTHER KEY IF USING A MICROCOMPUTER COMMUNICATIONS SOFTWARE PACKAGE.

The menu on the following page will appear in place of the asterisk prompt for the UMC's set up for the data administrators and data set team leaders.



```
                              MAIN MENU

1    [D]ata Element Dictionary

2    [B]ulletin Board

3    [I]ndex of Other Menus and Systems

4    [A]ssistance

5    [E]xit -- Return to the System Level (*) asterisk Prompt.
         You may then enter any valid command or program name.



     [BYE]  -  Log off the Honeywell computer

     To recall this menu, type  EX MENU  at the asterisk prompt

     Enter Command
```

NOTE -- THIS MENU WILL CHANGE FROM TIME TO TIME

Example

NOTE: Capitalized, boldfaced messages indicate computer generated information.

```
    PROGRAM NAME - (Choice depends on terminal type
     or          being used and normal log on
   RCF...Date     procedure.)
```

In response, type in TSS followed by a carriage return (CR)[1] or a carriage return. A carriage return is represented by (CR) throughout. Use the Program Name TSS or (CR) for all time-sharing operations (Examples of information or data to be entered by the user are capitalized and boldfaced followed by a carriage return.) For this example, type in

```
TSS (CR)
```

The computer responds with

```
BLM COMPUTER CENTER 08/13/86 AT  8.388  CHANNEL 2632.TS1

USER ID--
```

To this prompt, type in the assigned UMC or User ID, followed by a carriage return which appears similar to the following example:

```
A358 (CR)
```

The computer then asks for

```
PASSWORD--
XXXXXXXXXXXXX
```

Type in the assigned password. For example,

```
TREES (CR)
```

The computer responds with

```
CHARGE CODE—
XXXXXXXXXXXXXX
```

Type in the assigned charge code. For example,

```
HB35 (CR)
```

[1] Carriage return (CR) and transmit mean the same. The one used depends on terminal type (i.e., TTY or VIP).

Next, the computer asks for a charge code password.

```
CHARGE CODE PASSWORD—
XXXXXXXXXXXXXXXX
```

Key in the assigned charge code password. For example,

```
BUSHES (CR)
```

To shorten the procedures for entering user identification information, users can combine the previous examples into one user identification string that can be typed at the computer prompt in a format like the following example:

```
*UMC$PASSWORD;CHARGE CODE/CHARGE CODE PASSWORD (CR)
```

```
*a999$xrew34;in99/stxiue
```

A999 is the user id or umc
XREW34 is the user id password
IN99 is the charge code
STXIUE is the charge code password

After the user identification has been correctly entered and the remote terminal connected to the DPS-8/70, the system displays a message about the Info Index followed by an asterisk (*) prompt. For example,

```
ALL USERS TYPE "INFO INDEX" TO SEE THE HEADLINES

*
```

At this point, type in INFO INDEX to see what messages are being sent through the computer system. This message file does not have to be checked every time one logs on the computer, but it should be reviewed at least once each day. Any change in log on procedure will be found in INFO INDEX.

```
INFO INDEX (CR)
```

The computer responds with some information similar to the following:

```
THIS INDEX TO NEWS CONTAINS INFORMATION REGARDING THE
FOLLOWING TOPICS. TYPE "DISP XXX/XXX/XX, WHERE XX IS THE FILE
SHOWN.

INFO RE: POWER OUTAGE        TYPE INFO POWEROUT

INFO RE: CHANGES TO DPS-8/70 SPSS-X SOFTWARE   TYPE INFO SPSS-X

INFO RE: ASPEN/2 BASIC RESTRICTED TO TS1    TYPE INFO TS1-CPE
```

After this asterisk prompt, type in the string naming the program to be used; or type the word BYE into the computer followed by a carriage return to disconnect the remote terminal or computer from the mainframe computer.

A. PRINT CONTROL

Commands to control printing come from three sources: the program, the communications software, or the printer itself. Commands from all sources may be needed in order to control the printing of your output.

1. PRINTER CONTROLS

Printers are controlled by program settings, switch settings or both. The instructions to use these controls are found in the printer User's Guide.

Example:

If users enter the ASPEN/2 command CL = 132 (character per line = 132) and the printer is set for 80 characters, data will wrap around making the information hard to read.

In many cases you will have to set both the program and your printer.

2. VIP TERMINALS AND PRINTERS

Many offices use VIP (Honeywell CRTs) or TANDBURG terminals with a Mannesman Tally Printer.

The following commands are useful with these printers:

PLMS - TURNS ON VIP TERMINAL PRINTERS
PLMR - TURNS OFF VIP PRINTERS
PGON - SETS VIP TERMINALS TO AUTOMATIC PAGE STOP AT 24 LINES OF PRINT
PGOF - TURNS OFF PAGE STOP TURNED ON BY PGON
TAND - CHANGES PRINTER LINE LENGTH/SIZE FOR MANNESMAN TALLY PRINTERS

Complete documentation for the above commands may be obtained by entering DOCU at the * prompt followed by a four-character command, i.e., DOCU TAND.

See Attachment 1.

3. PC USING SOFTERM

a. first turn on printer.

b. To capture print press Alt 1, while in softerm, which will select SOFTERM's utility functions on a pop-up menu. The desired functions may be selected by pressing corresponding function keys.

Attachment 1. Documentation of Command Library.

DOCU TAND

TAND SOURCE - SOFTWARE/CMDLIB/SRC/TAND.G

CHANGES PRINTER LINELENGTH/SIZE. APPLICABLE ONLY TO TANDBERG TERMINALS WITH MANNESMAN TALLY PRINTERS ATTACHED. AVAILABLE LINELENGTH/SIZES ARE 132, 158, 218, and 264. THIS UTILITY REQUESTS DESIRED LINELENGTH AND SENDS THE APPROPRIATE CONTROL CHARACTERS TO SET THE PRINTER.

THE USER MAY ALSO USE A SHORT FORM OF THE UTILITY BY ENTERING THE DESIRED LINELENGTH/SIZE FOLLOWING THE COMMAND (IE. 'TAND 158'). USE OF THE SHORT FORM BYPASSES NORMAL COMMAND PROMPTS AND INFO MESSAGES WITH THE EXCEPTION OF ERROR MESSAGES.

ONCE THE PRINTER HAS BEEN SET, THE USER MUST USE 'PTON' OR 'PLMS' OR 'LPRT' COMMANDS TO DIRECT DATA TO THE PRINTER.

NOTE: USE OF THE TANDBERG 'PRINT' KEY PRIOR TO USE OF THIS UTILITY WILL CAUSE THE ERROR 'BAD PDENQ TST FROM D10CMD'. THIS PROBLEM WILL BE AVOIDED BY HITTING THE TANDBERG 'INIT' KEY PRIOR TO USE OF THE 'TAND' COMMAND.

IF YOU HAVE ANY PROBLEMS OR QUESTIONS, PLEASE CONTACT THE DENVER SERVICE CENTER, DPS8 SOFTWARE SECTION, FTS 776-6515 or Commercial (303)236-6516.

NOTE -- If you are having problems with your particular computer/printer configuration, please call your computer specialist in your state or district office before calling the Service Center. Configurations are, often times, peculiar to individual offices and Service Center specialists may not be able to help you. Your local computer specialist can help you better through the configuration process.

Appendix 3
Data Entry Worksheet Instructions And Sample Entry Forms

1. Data Set Name (40 positions): Enter the name of the data set you are inventorying, e.g., game fish, oil and gas.

2. Field Length (7 positions): Enter the maximum character width for a given data element. This would be a number from 1 to whatever the maximum number of characters that is needed for a data element. Maximum character width should be used because smaller fields will fit, but if the field width is too small then entries will be truncated.

3. Data Element Name (40 positions): Enter the data element name. The data element name describes the basic level of information being gathered, e.g., species, number of developed recreation sites, flow rate, AUMs authorized. This should be an understandable English name. Formal structured data element names will be assigned by the Service Center.

4. Authority (10 positions): The authority may be an act, a BLM Manual section, or a Washington Office request. All data should have a reason for being collected. If the reason is not readily apparent, enter UNK. If the authority for gathering data is an act, enter PL number (for example PL 90-340); if the authority is a BLM Manual section, enter the section number (for example 1792); if the authority is a Washington Office request, enter WO-REQ.

5. Source of Information (20 positions): This field describes where the data element originated. The origin of the data element could be a BLM Manual section or another federal or state agency, e.g., game count procedures from a state wildlife agency or soil inventory form from the Soil Conservation Service. For federal agencies, use the proper agency name abbreviation from Attachment 2. Be specific enough so that the source can be found again, i.e., BLM Manual 6602, FIPs Pub 230, etc.

6. Form (10 positions): If information is recorded on a form, record the form number, i.e., SF-1080. If not, enter no.

7. Automated (1 position): If the data is already automated, enter the primary computer where the data resides.
    - Z - Not automated
    - L - DPS6 Honeywell
    - D - DPS870 Honeywell
    - M - Micro based system
    - P - Prime system
    - G - Data General
    - O - Other

8. Graphics (1 position): Enter appropriate response.
    - Y - Yes, the information will be used in GIS
    - N - No, the information will not be used in GIS
    - U - Unknown.

   If the data needs to be spatially displayed, also include a paper attachment giving the symbols you may use, the scale at which the symbols are normally displayed, and whether the symbols are home grown or standard. If the symbols are standard, tell who uses them.

9. Security (3 positions): Data security is divided into two major categories: public and internal. Internal data is not routinely released to the public and is further defined as Proprietary/Confidential, Personal, Investigatory, and Other. Public data is information that anyone within or outside the Bureau may see (read only access) such as the following:

   (1) Public Room record material (e.g. master title plats, docket case files);
   (2) Information from Bureau final (signed) policy decisions (e.g. central files data, final opinions rendered in the adjudication of cases); and
   (3) Otherwise publicly available information (e.g. proposed and final regulations).

   Public information can be released without a request under the Freedom of Information Act.

   Proprietary/Confidential information is created by a nongovernment source and submitted to the Bureau in the conduct of federal business. Its release could competitively harm the submitter. This category includes trade secrets and other intrinsically valuable submitter data.

Investigatory information relates to law enforcement data whose premature release would impede Bureau investigations.

Other (Internal) information includes any pre-decisional data, draft data and staff recommendations and opinions as opposed to management decisions, and draft data. This category includes (1) any other data created by the Bureau to allow it to gain full value for its resources or to protect its resources from exploitation and (2) personal/private data whose release would constitute an unwarranted invasion of privacy. Examples of this category include the location of archaeological sites; appraisal data; and such information about employees as social security numbers, dates of birth, marital status, and medical conditions.

Enter the applicable data security code:

PUB - Public information, no restrictions
IPR - Internal Proprietary
IN - Internal Investigatory
IOT - Internal Other

10. New/RW/Accept (1 position): Enter whether the data element is new, a rewrite of a previously defined data element, or acceptance of a previously defined data element.

    1 - New
    2 - Rewrite Previous
    3 - Accept Previous

11. Data Element Number (4 positions): Enter the number assigned in the current data element dictionary if it applies (code 2 or 3 entered in response to previous question); otherwise leave blank. Use all four positions; for example 0002, 0033, 0444.

12. Standards (1 position): If you have developed and use a consistent means of recording data, this means is considered a standard; e.g., if a Special Recreation Permit is always referred to as SRP or if elk is always referred to as 03, these are standards. Enter appropriate response.

    Y - Yes, there are established standards
    N - No, there are no developed standards.

13. Data Category (1 position): Data is categorized as being corporate (shared) data or noncorporate data. Corporate (shared) data is used throughout the Bureau and should be standardized. Noncorporate data may be shared within a state or district and may be standardized at that level. Enter data category.

    C - Corporate (shared) Data
    D - Noncorporate Data (Was previously termed discretionary data)

14. Frequency of Use (2 positions): estimate the frequency of use for each data element. Enter the most accurate:

    1D - Every Day
    2W - Twice a Week
    1W - Once a Week
    2M - Twice a Month
    1M - Once a Month
    L - Less than Once a Month

15. Print (1 position): This field allows the user to mark individual records that will then selectively print or not print in reports. Inventory personnel should ignore this option (leave equal to 'Y').

    Y - Yes, print the record.
    N - No, don't print the record.

16. Descriptive Data Element Name (3 fields, each 65 positions): Use only as needed, not required. This field would be used if the data element name is not specific enough to describe the data element to someone who knows nothing at all about the data set or data element.

17. Element Definitions (7 fields, each 65 positions): The description of the type of data the data element will contain. Needs to be described in plain English and be understandable to a non-technical person. Also use this field to list possible alternate (aliases) names for the data element.

18. Standards Descriptions (7 fields, each 65 positions): Describe the standards (limits, ranges, precision, units of measure) which will be used in recorded the data to be placed in the data element. For example, record the width of the right-of-way to the nearest foot. If the standards exceed the allowable space on the dBase program attach hard copy of the standards.

19. Codes (7 fields, each 65 positions): Describe and list any codes necessary to record the data in the data element. Enter codes here if enough room exists; otherwise submit a hard copy. If the list of codes is too voluminous to reproduce, provide examples and indicate the number of codes in use. Example: GRASS - AGSM = Agropyron smithii; AGSP = Agropyron spicatum.

20. User field (2 fields, each 20 positions): These fields are available to the user to use however they wish. They are not listed on the data entry worksheet but are on the second data entry screen and show up on the complete report. Also the complete report will allow you to query by the user fields.

Attachment 1
Federal Agency Abbreviations

Dept. of the Interior	DOI
Bureau of Mines	BM
National Park Service	NPS
Fish & Wildlife Service	FWS
Bureau of Reclamation	BR
Geological Survey	GS
Bureau of Indian Affairs	BIA
Minerals Mgmt Service	MMS
Interior Board of Land Appeals	IBLA
Office of Surface Mining Reclamation and Enforcement	OSM
Dept. of Agriculture	USDA
Forest Service	FS
Soil Conservation Service	SCS
Animal & Plant Health Service	APHIS
Agricultural Research Service	ARS
Rural Electrification Administration	REA
Dept. of Defense	DOD
Corps of Engineers	COE
Army	USA
Air Force	USAF
Navy	USN
Marine Corps	USMC
Defense Mapping Agency	DMA
Dept. of Commerce	
Bureau of the Census	BOC
Nat'l Oceanic & Atmospheric Admin.	NOAA

Dept. of Energy	DOE
Federal Energy Regulatory Commission	FERC
Bonneville Power Administration	BPA
Western Area Power Administration	WPA
Southeastern Power Administration	SEPA
Southwestern Power Administration	SWPA
Economic Regulatory Administration	ERA
Dept. of Transportation	DOT
US Coast Guard	USCG
Federal Highway Administration	FHA
Other Agencies	
Dept. of Labor	DOL
Dept. of Justice	DOJ
Tennessee Valley Authority	TVA
Office of Personnel Management	OPM
General Services Administration	GSA
General Accounting Office	GAO
Office of Management & Budget	OMB

For agencies not on this list, enter the agency name in the field provided.

Data Standards Program
Data Entry Worksheet

(11/13/89)

1. Data Set Name: ______________________________: (e.g., Riparian, Cultural, etc

2. Field Length:__________: 4. Authority: ______________________: (e.g., PL 90-340 or UNK)

3. Data Element Name: ______________________________:

5. Source of Information: ______________________________: (e.g., soil inv. from SCS)

6. Form: ______________: (e.g., SF-1080)

14. Frequency of Use: ____ : 1D=daily 2W=2/wk 1W=1/wk 2M=2/mo 1M=1/mo L=Less

7. Automated: ____ :

N —Not Automated
L —DPS6 Honeywell
D —DPS870 Honeywell
M—Micro Based System
P —Prime System
G —Data General
O—Other

8. Graphics: ____ :

Y —Will be in GIS
N —Will not be GIS
U —Unknown

9. Security: ____ :

PUB—Public, no restrictions
IPR —Internal Proprietary
IN —Internal Investigatory
IOT —Internal Other

15. Print this record?: Y:

10. New/RW/Accept:____: 1—New Element
2—Rewrite Previous
3—Accept Previous

11. Data Element Number:____:

12. Standards:____: Y—Yes, established
N—No, not developed

13. Data Category:____: C—Corporate
D—Non-Corporate

16. Descriptive Element Name:

: ______________________________

: ______________________________:

: ______________________________:

17. Element definition:______________________________:

: ______________________________:

: ______________________________:

: ______________________________:

: ______________________________:

: ______________________________:

18. Data Standards:______________________________:

: ______________________________:

: ______________________________:

: ______________________________:

: ______________________________:

: ______________________________:

19. Codes: ______________________________:

: ______________________________

: ______________________________

: ______________________________:

: ______________________________:

: ______________________________:

Appendix 4
Data Standards Program Instructions

11/16/89
Documentation

The requirements to run this program are an IBM-compatible microcomputer with a hard disk. dBASE III+ software needs to be loaded onto the hard disk and be part of the path, making it possible to begin the program in the DATA directory with the command: START.

Install Procedure:

Please start your IBM personal computer and get to the C:> prompt. If you are using a Wang or any other computer, you must have the computer emulate the IBM operating system. This program will not work unless operated on an IBM, IBM clone, or equipment emulating IBM operating systems through some software conversion. You must have a hard disk on your personal computer for this program to install itself.

At the C:> prompt, type
A:install C: (return or enter) installs program on C drive.
A:install D: (return or enter) installs program on D drive.

IF INSTALLED TWICE ON THE SAME PC,
ALL PREVIOUS DATA WILL BE ERASED

The program will make a directory called Data on the C or D drive and install itself on that drive. Change back to the C or D drive, i.e., type C: (enter or return). If you lose the remainder of these instructions, you may type print readme.txt, and a file will be sent to your printer and printed. This file will include these directions as well as directions on how to use the menus that are part of this program. Read these directions carefully before proceeding.

At the C:> prompt, type START or type DBASE DATA (return or enter) or load dBASE III plus. If you type DBASE DATA or START, a menu will appear. (Follow the directions described above when menu appears.) If you load dBASE III plus, please go to the (.) dot prompt and type DO DATA (return or enter). A menu will present itself on the screen, and you need to follow the menu directions. A description of the menu options follows later in this documentation.

Program Options

Add new records:

Select ADD from the main menu by typing 1 and pressing Enter.

The add option has two screens. The first screen prompts for the first fifteen data fields (all data fields except for element definitions entered on the second screen).

All alpha characters are automatically stored in uppercase. When the last field is entered, the second screen will appear. The PgDn key will also take you to the next screen.

Data fields 1 thru 10, 11 (given certain circumstances), and 12 thru 14 require entries. If these fields are empty and you press PgDn, the program will beep and remind you that an entry is needed.

The following fields are also checked for valid codes: Frequency of Use (14), Automated (7), Graphics (8), Security (9), New/RW/Accept (10) and Data Category (16). If a wrong code is entered for any of these fields, the program will beep and flash an error message at the top of the screen, showing which field is incorrect and the acceptable codes. The user can then correct the entry and press PgDn to continue.

After you enter the first screen and check the coded fields, screen two is displayed. Here is where you enter the descriptive element name and element definitions. User fields do not require entry but may be used to store additinal data. Data can be entered here in narrative form. Press PgDn and screen three is displayed. Here is where you enter data standards and codes in narrative form. When finished, press PgDn. The record will be saved, and an empty screen 1 will be displayed. At this point you may either continue to enter another record or quit. To quit (return to main menu), press ESC.

If you wish to return to the first screen when you are on the second screen, press PgUp. PgUp may also be pressed while on the first screen in order to look at the previous record. The same checks for required fields and valid codes are made as when you press PgDn. If you are on the first record, PgUp will have no effect.

Edit an existing record:

To edit a record, select number 2 from the main menu and press Enter. You are then prompted with:

"Query by (E) Set/Element Name or (R) Record Number ==>"
    Enter "E" to query by the Set or Element name.
    Enter "R" to query by the Record number.
Follow either entry with an Enter.

If you select the first option (to query by set or element name) another menu screen will appear. On this screen the following options are available:

Optionally Enter:

1. Complete Set Name OR First character(s) of Set Name
2. Complete Set Name AND Complete or First character(s) of Element Name
3. Complete Element Name OR First Character(s) of Element Name
4. Both items blank causes return to previous screen

Use option 1 if you want to start editing with the first record in a particular data set. Only enough characters to make the selection unique is needed.

Use option 2 if you want to edit starting with the first occurrence of a particular string of characters in the data element name but want to make sure it is in a particular data set.

Use option 3 if you just want to edit the first occurrence of a data element name (or string of characters) no matter which data set it occurs in.

Option 4 provides the mechanism to go back to the previous screen.

If you select the second on the main edit menu (R) then you must know the record number of the data element you wish to edit. Assigned by the computer, the record number can be found in each report and is not the same number as found in the element number field. The record number will always be unique for each record, whereas the element name could be duplicated for more than one record.

After retrieving the record, you will see the same two sets of screens used for data entry. Using the enter key or arrow keys, you can move to any field on screen 1. Press the PgDn key to go to screen 2. The same coded fields will be checked on screen 1 as when the record was first entered. You can edit the fields on screen 2 by using the arrow keys. Press the PgDn key to go to screen 3. Do not use the edit screen to add a new records. As in the ADD portion of the program, if you press PgUp you will be returned to the first screen if you are currently on the second screen and to the previous record if you are currently on the first screen. If you are on the first record, then PgUp will keep you at the same place. Press ESC to return to the previous menu.

Deleting a record:

Select number 3 (Delete/Pack/Reindex) on the main menu and press Enter. A reminder is issued on the following screen to do Option 7 from the Report Menu prior to Packing (final removal) of the records. Mark records to be removed by selecting "1. Mark Records for Deletion " from the "Remove Information Menu."

Next you are prompted with:

"Query by (E) Set/Element Name or (R)Record Number ==>"
Enter "E" to query by the element name
Enter "R" to query by the record number.

These options for locating the desired record are the same as in the edit records portion of the program.

If the record is found, part of it will be displayed on the Record Deletion Screen and you will be asked "Do you want to DELETE this record? Y/N" By selecting "Y," the record will be marked but not yet removed.

After marking the record, you will be asked: "Do you want to delete another record? Y/N" Mark all records to be removed first before continuing. When you are finished marking records, the program will ask:

"Do you want to pack the database?"

If you select "N," you return to the main menu. If you select "Y," the "Remove Deleted Data Records" screen will be displayed. This screen reminds the user that Packing permanently removes those records which have been marked for deletion. The program asks if you wish to continue. If you continue, the screen will display all records marked for deletion (one screen at a time).

At this point you may recall any record (unmark) by enter the record number. Entering a 0 moves you to the next screen and entering a -1 ends the job and packs the database.

CAUTION: Once a record is removed (packed), it cannot be retrieved. Once the database is packed, record numbers are changed and new reports need to be run to show the new record numbers.

If you need to reindex the database, the delete records menu's can be used to accomplish this. Simply make sure that you have no records marked for deletion and then pack the database. This will cause the database to be reindexed.

Reports:

Select number 4 from the main menu and press Enter to go to the Report Selection Menu. Here you have the seven choices. Most of the options require 132 character (wide) print. (NOTE: This program does not compress the print (although many printers can be set to print in compressed mode). Only those records where the print field is equal to "Y" will be printed.)

1) The Complete Report - lists all information, two records per page. Records can be sorted by element name, element number, category or order records were entered. Records can be queried for specific values by element name, element number, category, data set, user field one, user field two or all records can be selected.

2) Noncorporate Data Report - lists all information except element definitions, standards, and codes for every record that has a data category equal to "D." This report can be sorted the same as Report 1. This report is a required element of the data set team report.

3) Corporate Data Report - lists all information except element definitions, standards, and codes for every record that has a data category equal to "C." This report can be sorted the same as Report 1. This report is a required element of the data set team report.

4) Preliminary Report - lists only the element number, element name, descriptive element name, element definitions, and record number for all records. This report is in two parts. The first part has all the records with an element number and is sorted by element

number. The second part has all the records with a blank element number and is sorted by element name. This Report can be queried the same as Report 1.

5) Print All Records - One Per Page - This report prints all records regardless of the contents of the print field. Printout resembles data entry form (both screens on one page). Can be sorted same as Report 1.

6) Print Specified Record On One Page - This report prints all records regardless of the contents of the print field. Printout resembles data entry form (both screens on one page).

7) Mark ALL Records so they will be printed - This option changes all entries in field 15 (Print Y/N) to Y.

8) Print records marked for deletion - This option gives you the opportunity to print report 1 for those records that have been marked for deletion.

Copy Files:

This option can be used to send data from one office to another. The data can then be combined with other data or installed on a PC that does not have the data standards program.

To copy all of the files from the hard drive to a floppy disk, select number 5 on the main menu and press Enter. The program will allow you to select either the A or B floppy drives. When all the files have been copied to the floppy disk, you will be returned to the main menu. If your database is larger than 360k in size this option will not work. The option will also not work in an unformatted diskette is used. Consult with your State Office Data Administrator on how to proceed in such cases.

Combine Files:

To combine the data from a floppy disk to the program on the hard drive, select number 6 on the main menu and press Enter. This option copies all records located on a floppy disk and adds them to the records on the hard disk. The program will allow you to select either the A or B floppy drives. When all records have been copied from the floppy disk, you will be returned to the main menu.

Backup Files:

Regularly back up your data onto floppy disks to prevent the loss of your work. To back up your data, select number 7 on the main menu and press Enter. The program will then prompt you to place a disk in drive A. If more than one floppy disk is needed, the program will prompt you accordingly. When completed, you will be returned to the main menu.

The backup option is an efficient way to quickly copy your data and program onto floppy disks. If something happens to the data on your hard disk or your hard disk fails, your information can be retrieved from backup floppies. To restore data, you will need to type the DOS command RESTORE A: DATA *.* C:

This option should NOT be used to distribute your database in the team report. This is a DOS command that is version specific. Restoration is not possible on computers with another version of DOS.

Documentation:

For on-line documentation, select number 8 from the main menu. The program will then scroll you through a file called Readme.txt, which will instruct you on how to install and start the program. Also included in the documentation is a description of each data field and appropriate codes.

Incompatibilities with Wang PCs:

Three menu options will not work on the Wang:

5) Copy files
7) Backup files
8) Documentation

These options can be executed from DOS on the Wang PC by using the following commands:

5) Copy files ==> COPY DATA.DBF A:
7) Backup files ==> BACKUP *.* A:
8) Documentation ==> TYPE README.TXT=MORE

Illustration 1
Memorandum Requesting Participation on Data Set Teams

9690 ( )

Memorandum

To: State Director, (add the states), Director, Service Center (if team member from SC), Assistant Director, (Assistant Directorate of state that team member is from)

From: State Director (name of lead state); or Assistant Director, if lead is in WO; or Director, Service Center if lead is there)

Subject: Participation on Team to Develop Data Elements and Standards for ______ Data Set.

The (name of data set) data set has been assigned to (name of BLM State) for lead responsibility in developing data elements and companion standards and definitions. Through telephone calls to your staffs, (name of person) from your (name of DO, RA, or SO staff) has been recommended as an effective representative from your organization to participate on the data set team.

We expect this assignment to involve several working meetings over the next (number of months). The deadline for completing this task is (date). The travel and participation costs of all team members will be borne by their organizations. We appreciate your staff's participation in this important step in preparing for BLM's Land Information System target system.

Please have (name of requested team member) call (name of data set team leader) to confirm his or her participation on this task and then submit written confirmation.

cc:
Lead ADDA, SODAs from states participating on team, SCDA if team member is from SC

Illustration 2
Memorandum of Welcome to Data Set Team Member

9690 (   )

Memo To: Data Set Team Member
From: Data Set Team Leader
Subject: Welcome To The Team

I have been appointed as the ______________ data set team leader. I would like to welcome you as a member of the data set team and thank you for your willingness to serve on the team. We have an important task facing us over the next _________ months. The other team members who will be joining you are (insert names, offices, and phone numbers of each team member).

The purpose of the team is to select the information that will make up the ____________ data set and to establish standards for recording this information. A *Handbook* (see attachment 1) has been prepared to assist us in this effort. Please become familiar with the *Handbook*; the procedures outlined within it provide the framework we have to work in.

To meet the deadlines set for this task, our efforts will have to be given priority over other workloads. Efficient and quick communications among team members will also be crucial. Please make best use of phone calls and electronic mail to share information.

Some travel for team meetings will be required. I hope to require as few trips as possible, but some of our work meetings will involve extended periods of travel. All meetings are scheduled to be held in my office.

I will call you to arrange the first team meeting. If you have any questions, please call me at (give phone number). Once again, welcome. I look forward to working with you.

Attachment

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                                  BUREAU OF LAND MANAGEMENT
                                 DATA ELEMENT KEYWORD LISTING

KEYWORD          DENO   TITLE                                                          MNEMONIC
-------          ----   -----                                                          --------

ESTIMATED      - 3957 - ESTIMATED PERCENT COMPOSITION                                  - EST-PCT-COMPS
               - 4913 - COST ESTIMATED                                                 - COST-EST
               - 5474 - DAMAGE, ESTIMATED ANNUAL, FLOOD AND SEDIMENT                   - 5474---PENDING
               - 6010 - AGE, ESTIMATED TREE                                            - EST-AGE
               - 6593 - ESTIMATED PERCENT OF POPULATION BEING HARVESTED                - PCT-POP-HARV
               - 6649 - ESTIMATED NUMBER OF ANIMALS OBSERVED                           - EST-NO

ESTIMATES      - 6674 - DATA SOURCE POPULATION ESTIMATES                               - POP-EST-SRC
               - 9401 - POPULATION ESTIMATES - URBAN                                   - 9401---PENDING
               - 9402 - POPULATION ESTIMATES - RURAL                                   - 9402---PENDING
               - 9414 - POPULATION ESTIMATES - MUNICIPALITIES                          - 9414---PENDING

ETC            - 3609 - NUMBER OF UNITS   (PROJECT, LAND TREATMENT,ETC)                - NUM-OF-UNITS

ETHNIC         - 4582 - ETHNIC GROUP                                                   - ETHNIC-GP
               - 9413 - ETHNIC DISTRIBUTION                                            - 9413---PENDING

ETR            - 5614 - GROSS CUBIC VOLUME IN SAWLOG PORTION OF TREE PER ACRE ETR      - 5614---PENDING
               - 5620 - NET CUBIC VOLUME IN SAWLOG PORTION OF TREE PER ACRE ETR        - 5620---PENDING
               - 5647 - NET ANNUAL GROWTH SCRIBNER BD. FT. PER ACRE ETR                - 5647---PENDING
               - 5650 - NET ANNUAL GROWTH BASAL AREA PER ACRE ETR                      - 5650---PENDING
               - 5651 - ACCRETION SCRIBNER FIX TOP PER ACRE  ETR (GROWING STOCK TREES) - 5651---PENDING
               - 5652 - ACCRETION SCRIBNER VARIABLE TOP PER ACRE ETR (GROWING STOCK TREES - 5652---PENDING
               - 5653 - ACCRETION INTERNATION 1/8 PER ACRE ETR (GROWING STOCK TREES    - 5653---PENDING
               - 5654 - ACCRETION CUBIC FEET PER ACRE  (GROWING STOCK TREES)  ETR      - 5654---PENDING
               - 5655 - ACCRETION BASAL AREA PER ACRE  (GROWING STOCK TREES) ETR       - 5655---PENDING
               - 5657 - STOCKING - GROWING STOCK PER ACRE ETR                          - 5657---PENDING
               - 5658 - STOCKING - NONGROWING STOCK STOCKING PER ACRE  ETR             - 5658---PENDING
               - 5659 - STOCKING - ALL LIVE TREE STOCKING PERCENTAGE PER ACRE  ETR     - 5659---PENDING

EVALUATION     - 2091 - ADJUSTMENT FACTOR, QUALITY EVALUATION                          - ADJ-FAC-QE
               - 2145 - REMARKS, QUALITY EVALUATION                                    - REM--QE
               - 2249 - CULTURAL RESOURCE EVALUATION SYSTEM                            - CR-EVAL
               - 2376 - EXTENT, EXPLORATION METHOD SUPPORTS RESOURCE EVALUATION        - EXTNT-EVAL
               - 2419 - YEAR OF EVALUATION                                             - YEAR-EVAL
               - 2939 - AVERAGE EVALUATION OF TRACT                                    - AVG-EVAL-TR
               - 3751 - EVALUATION, WELL SITE NARRATIVE                                - EVAL-WELL-SITE
               - 5118 - TREE HISTORY USFS RESOURCES EVALUATION                         - TREE-HIST-FSRV

EVAPO          - 3651 - AVERAGE ANNUAL EVAPO-TRANSPIRATION LOSS                        - AVG-AN-EVAPOTR

EVAPORATION    - 5426 - EVAPORATION, MEAN ANNUAL                                       - 5426---PENDING

EVEN           - 9251 - YEAR SEQUENCE - BIENNIAL EVEN NUMBERED YEARS FROM 1960         - 9251---PENDING

EVENTS         - 3882 - UNUSUAL PRECIPITATION EVENTS(INCHES)                           - PPT-UNUS-EVNT

EVIDENCE       - 6673 - EVIDENCE OF REPRODUCTION                                       - EVID-REPRO
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Illustration 3
Example of DED
Applications Index

Illustration 4
Memorandum Requesting State Office Help in Data Inventory

9690 (   )

To: State Director
From: State Director (or AD or SCD who has the assignment for the data set)
Subject: Existing Data Inventory for (insert name of data set)

(insert name of state) has been selected to participate in the data inventory process for the (insert name of data set). This process is a critical step in developing data elements and standards for the data sets within the Bureau's data classification structure. The purpose of the inventory is to collect information within the subject area of the data set on the data the Bureau now uses. The goal of the inventory process is to obtain a good representation of the diversity of the data being collected or used in connection with the subject of the data set.

Please provide the results of the inventory within your state to (name of the lead SODA) on my staff no later than (insert date). If you have questions please call (insert name of the data set leader) the data set team leader at (insert phone number).

Attached is an inventory process packet to help you conduct the inventory. The data set inventory packet includes 1) instructions, 2) definitions, 3) forms, and 4) a diskette containing a data base program to use in recording the inventory.

Illustration 5
Memorandum Requesting Review of Draft Data Set Report

9690 ( )

To: Lead AD, ADDA, Director SC, SC DA, All SD's and all SODAs
From: ______________, Lead SODA
Subject: Data Set Review for _______

The Data Set Team for ______________ has prepared a draft data set report(s) and requests that you have your organizations thoroughly review it/them. Management is especially encouraged to participate in this review.

Reviews should address the following points:

(1) Should the data element be considered corporate or noncorporate? List data elements that should not be corporate or noncorporate.
(2) Are the proposed data elements clearly and accurately described?
(3) Should more data elements be added to the lists? If so, please submit a data inventory form with the pertinent information on the data element recommended for addition.
(4) What is the rationale for recommended changes or additions?
(5) Are data elements compatible for all program uses?
(6) Do the standards for each data element apply to all programs that would use the data elements?

After you have received all review comments from your organization, please consolidate them, eliminating duplicates and resolving conflicts by working with the commenters. Your response should reach the ________SODA by __________. Please respond, even if you have no comments. Comments not received by the deadline may not be considered.